3rd Cycle Lower Shannon and Mulkear Catchment Report (HA 25D)

Catchment Science & Management Unit

Environmental Protection Agency

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Preface

This document provides a summary of the water quality assessment outcomes for the Lower Shannon and Mulkear Catchment, which have been compiled and assessed by the EPA, with the assistance of the Local Authority Waters Programme (LAWPRO), local authorities and RPS consultants to inform the draft 3rd Cycle River Basin Management Plan. The information presented includes status and risk categories of all waterbodies, details on protected areas, significant issues, significant pressures, source load apportionment modelling and load reduction assessments for nutrients where applicable, an overview of the 2nd Cycle Areas for Action and a list of proposed 3rd Cycle Areas for Action. These characterisation assessments are largely based on information available to the end of 2018, including the WFD Status Assessment for 2013-2018. Protected Area assessments are based on water quality information up to 2018 for Natura 2000 and Salmonid Waters; 2019 for Drinking Water; and 2020 for Nutrient Sensitive Areas and Bathing Waters.

The purpose of this draft report is to provide an overview of the situation in the catchment, draw comparison between Cycle 2 and Cycle 3, and help support the draft River Basin Management Plan 2022-2027 consultation process. Once the consultation process is completed the report will be finalised to reflect any changes and comments made as a result of the consultation process.

Water Framework Directive – key dates and terminology	
Cycle 2 – EPA Characterisation and Assessment	Characterisation and assessment to inform the Cycle 2 RBMP was largely based on 2010-2015 WFD monitoring data.
Cycle 2 Catchment Assessments	Catchment Assessments based on the Cycle 2 characterisation and assessment were published in September 2018.
2nd Cycle River Basin Management Plan (RBMP) 2018-2021	This plan was for WFD Cycle 2 which runs from 2016-2021. This RBMP was published late, with this plan covering 2018-2021.
2nd Cycle Areas for Action	These 189 Areas for Action were selected under the RBMP 2018-2021
Cycle 3 -EPA Characterisation and Assessment	Cycle 3 runs from 2022-2027. Assessments to inform the Cycle 3 RBMP is largely based on 2013-2018 WFD monitoring data. This is the latest WFD monitoring assessment period for which all data are available.
Cycle 3 Catchment Assessments	Catchment Assessments based on the Cycle 3 characterisation and assessment were published in August 2021.
3rd Cycle River Basin Management Plan 2022-2027	This draft RBMP is for WFD Cycle 3 which runs from 2022-2027. Public consultation on this plan by the DHLGH and LAWPRO is taking place in late 2021 and early 2022.
3rd Cycle Recommended Areas for Action – Protection/ Restoration/Projects	These recommended Areas for Action have been identified in the draft RBMP 2022-2027 and feedback can be given in the public consultation on this plan. They fall into 3 categories – Areas for Protection, Areas for Restoration and Catchment Projects.

Table of Contents

List of Figures

List of Tables

1 Introduction

This report aims to provide an overview of the water quality status, risk, key issues and significant pressures for all waterbodies in the catchment based on the Characterisation Assessment undertaken for the 3rd Cycle River Basin Management Plan. In addition, a comparative overview of the water quality in the Lower Shannon and Mulkear catchment between Cycle 2 and Cycle 3 characterisation is provided along with a summary of the progress made in the 2nd Cycle Areas for Action. The recommended list for the 3rd Cycle Areas for Action is also provided.

To provide context, the Lower Shannon and Mulkear catchment covers an area of 1,820km² and comprises Lough Derg and its catchment (Figure 1). The catchment is characterised by flat limestone plains, a small proportion of which are karstified to the east of Lough Derg, and the uplands of the Devil's Bit Hills in the southeast, the Slieve Aughty Mountains in the west and the Slieve Bearnagh and Arra Mountains in the south, between which the Shannon escapes to the south from Lough Derg. All of these upland areas are underlain by old red sandstone with metamorphic and volcanic rocks in the higher summit areas. This catchment can be divided into two regions, the area draining into the western and eastern sides of Lough Derg. The Shannon flows out of Lough Derg through the steep-sided gap between the Slieve Bearnagh and Arra Mountains where the towns of Ballina and Killaloe are located on the east and west bank of the river respectively.

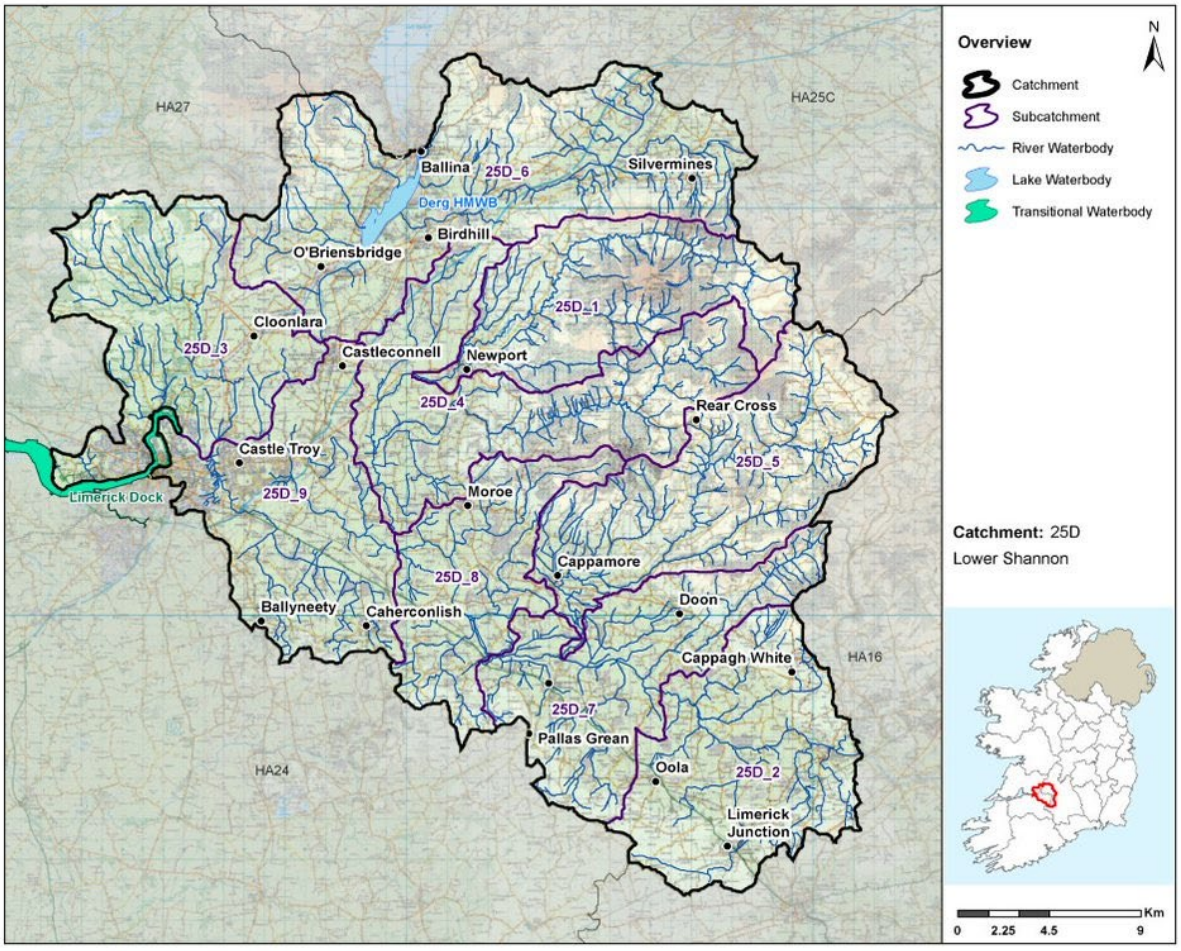


Figure 1: Overview of subcatchments in the Lower Shannon and Mulkear catchment

The Lower Shannon and Mulkear catchment is divided into nine subcatchments (Figure 1) with 48 river waterbodies, two lake waterbodies, two transitional waterbodies and 29 groundwater bodies (Figure 2).

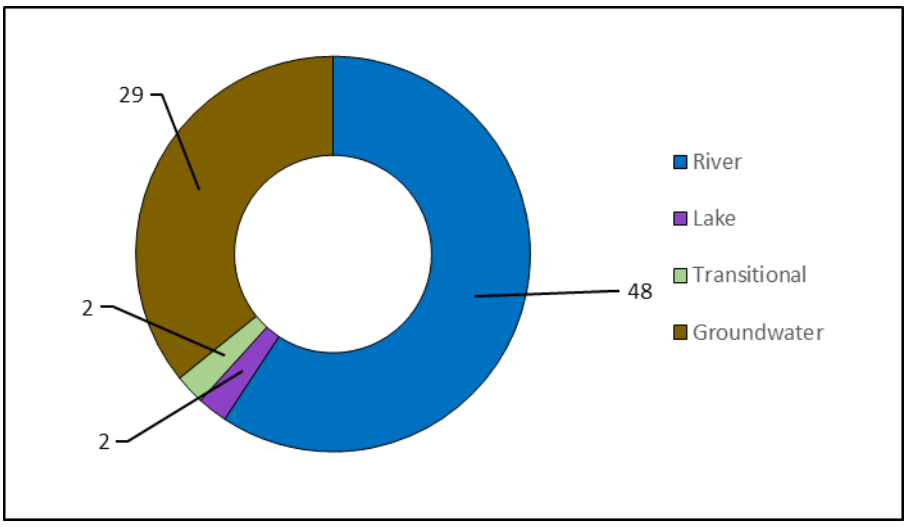


Figure 2: Waterbody types and numbers in the Lower Shannon and Mulkear Catchment.

2 Waterbody Overview

2.1 Waterbody Status

- This assessment to inform the 3rd Cycle RBMP is largely based on WFD monitoring data for the period 2013-2018, which is the latest WFD monitoring assessment period for which all data are available.

- For this assessment to inform Cycle 3, there are four waterbodies achieving High Status, 52 achieving Good Status, 10 achieving Moderate Status and six achieving Poor Status. There are nine unassigned waterbodies in the catchment. All waterbodies must achieve at least Good Ecological status.

- There are five river waterbodies that must achieve High Ecological Status (HES) in this catchment. These waterbodies are listed in Appendix 1. Of the five HES Environmental Objective waterbodies, two waterbodies are achieving High Status while three are at Good Status.

- The number of waterbodies achieving High Status and Good Status increased by one and five respectively. The number of waterbodies at Moderate Status and Poor Status reduced by one and five respectively (Figure 3 & Table 1).

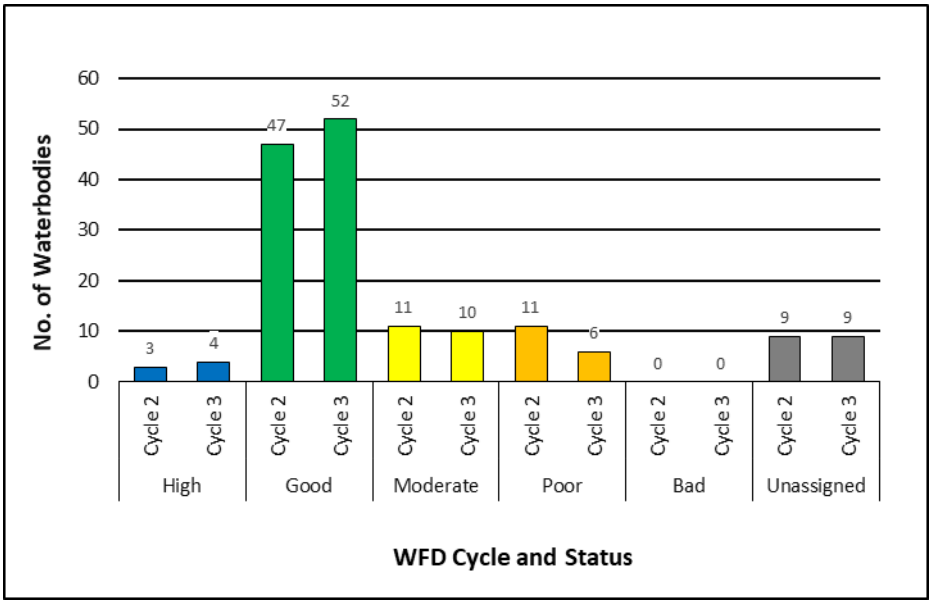


Figure 3: Waterbody Status Breakdown (All waterbodies)

Table 1: Waterbody Status Breakdown Table (All Waterbodies)

2013-2018 Status	River		Lake		Transitional		Coastal		Groundwater		Total	
	Cycle 2	Cycle 3	Cycle 2	Cycle 3	Cycle 2	Cycle 3	Cycle 2	Cycle 3	Cycle 2	Cycle 3	**Cycle 2**	**Cycle 3**
High	3	4	0	0	0	0	0	0	0	0	**3**	**4**
Good	24	23	1	1	0	1	0	0	22	27	**47**	**52**
Moderate	10	9	0	1	1	0	0	0	0	0	**11**	**10**
Poor	2	3	1	0	1	1	0	0	7	2	**11**	**6**
Bad	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Un-assigned	9	9	0	0	0	0	0	0	0	0	**9**	**9**
Total	48	48	2	2	2	2	0	0	29	29	**81**	**81**

- Figure 4 illustrates the change in status between Cycle 2 (assessment based largely on 2010-2015 WFD Monitoring data) and Cycle 3 (assessment largely based on 2013-2018 WFD monitoring data.

- Over this period, 12 (17%) waterbodies have improved in status, 55 (76%) waterbodies have remained unchanged and five (7%) waterbodies have declined in status.[1]

- There is an overall improvement in the status of seven waterbodies across the catchment since the Cycle 2 assessment.

[1] Unassigned waterbodies have not been considered in this Status class change assessment and therefore are not represented in Figure 4. Percentage displayed in the Figure 4 are in relation to the total number of waterbodies with status assigned in both cycles, as opposed to total number of all waterbodies.

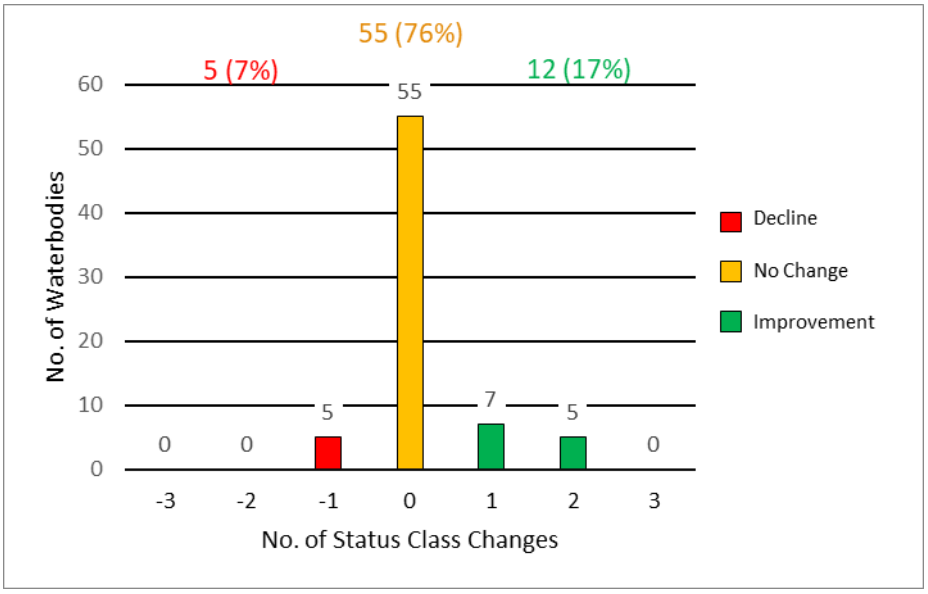


Figure 4: Status Class Changes between Cycle 2 and Cycle 3

2.2 Protected Areas

2.2.1 Drinking Water

- There are three surface waterbodies in the catchment identified as Drinking Water Protected Areas (DWPA) based on water abstraction data on the abstraction register and from other sources in 2018. All groundwater bodies nationally are identified as DWPA. DWPA layers can be viewed at https://gis.epa.ie/EPAMaps/Water - see *Protected Areas - Drinking Water*.

- One groundwater body in the catchment did not meet the DWPA objective in 2019:
  - Templemore (IE_SE_G_131) groundwater body is the source for Templetuohy public supply (2800PUB1013) which had nitrate exceedance.

- For more detailed information please see the EPA reports on drinking water quality in 2019 for Public Supplies[2] and Private Supplies[3].

2.2.2 Bathing Waters

- There are no bathing waters in or directly adjacent to the catchment identified under the Bathing Water Regulations 2008.

- For more detailed information please see the EPA report on bathing water quality in 2020[4].

2.2.3 Shellfish Areas

- There are no designated shellfish areas in the catchment.

[2] https://www.epa.ie/publications/compliance--enforcement/drinking-water/annual-drinking-water-reports/drinking-water-quality-in-public-supplies-2019.php

[3] https://www.epa.ie/publications/compliance--enforcement/drinking-water/annual-drinking-water-reports/focus-on-private-water-supplies-2019.php

[4] https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/bathing-water-quality-in-ireland-2020-.php

The locations of Protected Areas associated with Public Health (Drinking Water, Bathing Water and Shellfish Areas, where applicable) are illustrated in Figure 5 below.

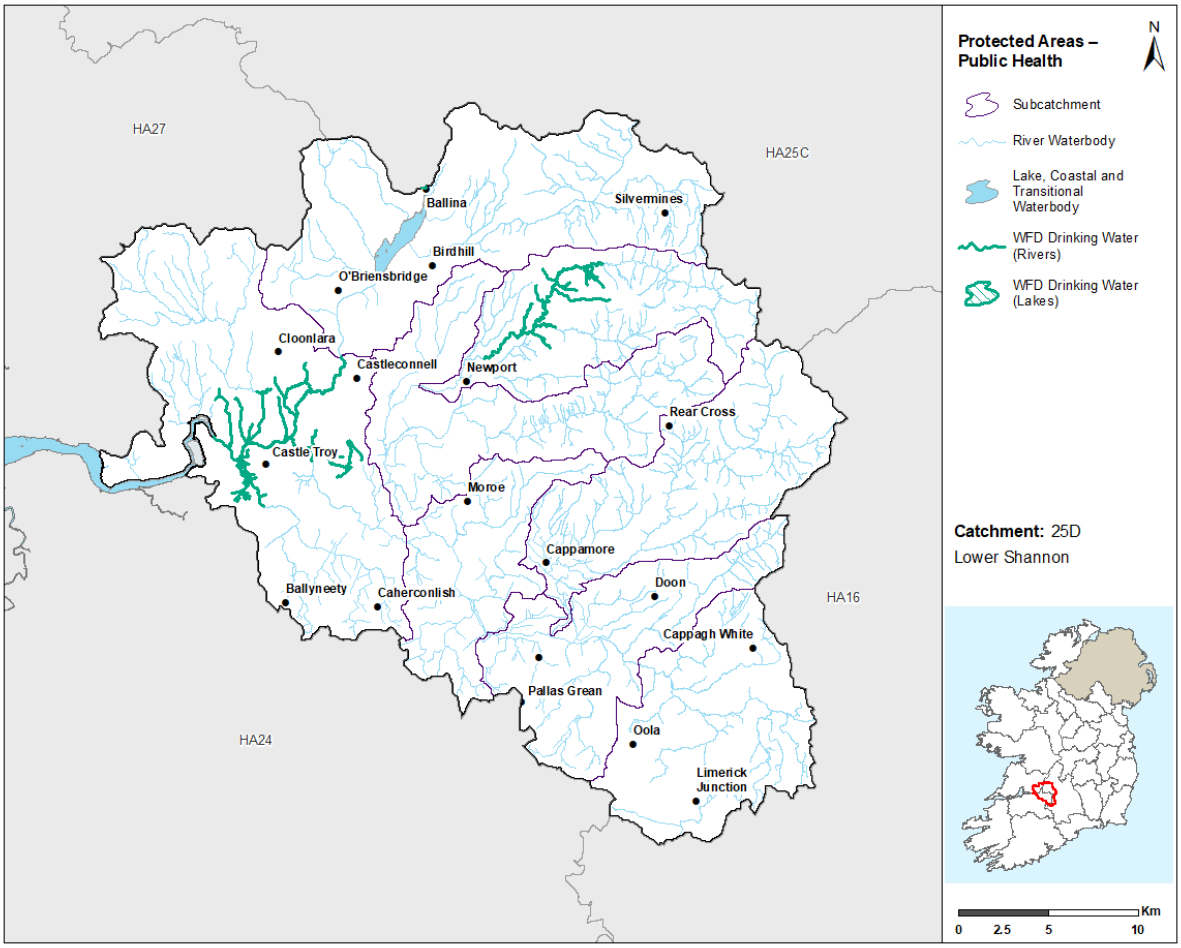


Figure 5: Protected Areas – Public Health

2.2.4 Natura 2000 Sites

- Many of the habitats and species listed for protection in the Birds and Habitats Directives are water dependent. The Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) with water dependent habitats or species in this catchment are presented in Figure 6, along with waterbodies designated as salmonid waters (S.I. No. 293 of 1988) and waterbodies with Fresh Water Pearl Mussel habitat, where identified.

- There are 11 SACs in this catchment, 10 of which have water dependent habitats or species. The waterbodies within these SACs were assessed for associated water dependent habitats and species and if they met the supporting requirements for habitats and species using their 2013-2018 WFD status. For the purposes of the assessment, it was assumed that Good ecological status is adequate to meet the supporting conditions of all habitats and species with the exception of the Freshwater Pearl Mussel, which has additional requirements for supporting conditions set out in the Freshwater Pearl Mussel Regulations (S.I. No 296 of 2009) for macroinvertebrates, filamentous algae, phytobenthos, macrophytes and siltation.

- Specific water supporting conditions have not been identified for the dependent bird species in the SPAs and so waterbodies associated with SPAs are not included in this assessment.

Results of the overall assessment for this catchment are outlined in

Table 2 below, information at a waterbody level can be viewed at Catchments.ie.[5]

Table 2: Natura 2000 Network Assessment Summary

Water Body Type	Total No.	Meeting the Requirements	Did not meet the Requirements	Unknown*
Rivers	26	18	3	5
Lakes	2	1	1	0
Transitional & Coastal	1	0	1	0

**As the waterbody status was unassigned.*

- There are no river waterbodies with FWPM habitats in the catchment.
- There are no groundwater bodies delineated and assessed as Groundwater Dependent Terrestrial Ecosystems for this catchment.
- Water dependent SACs/ SPAs in the catchment are illustrated in Figure 6.

[5] https://www.catchments.ie/download/catchments-assessments-protected-areas-supporting-documents/

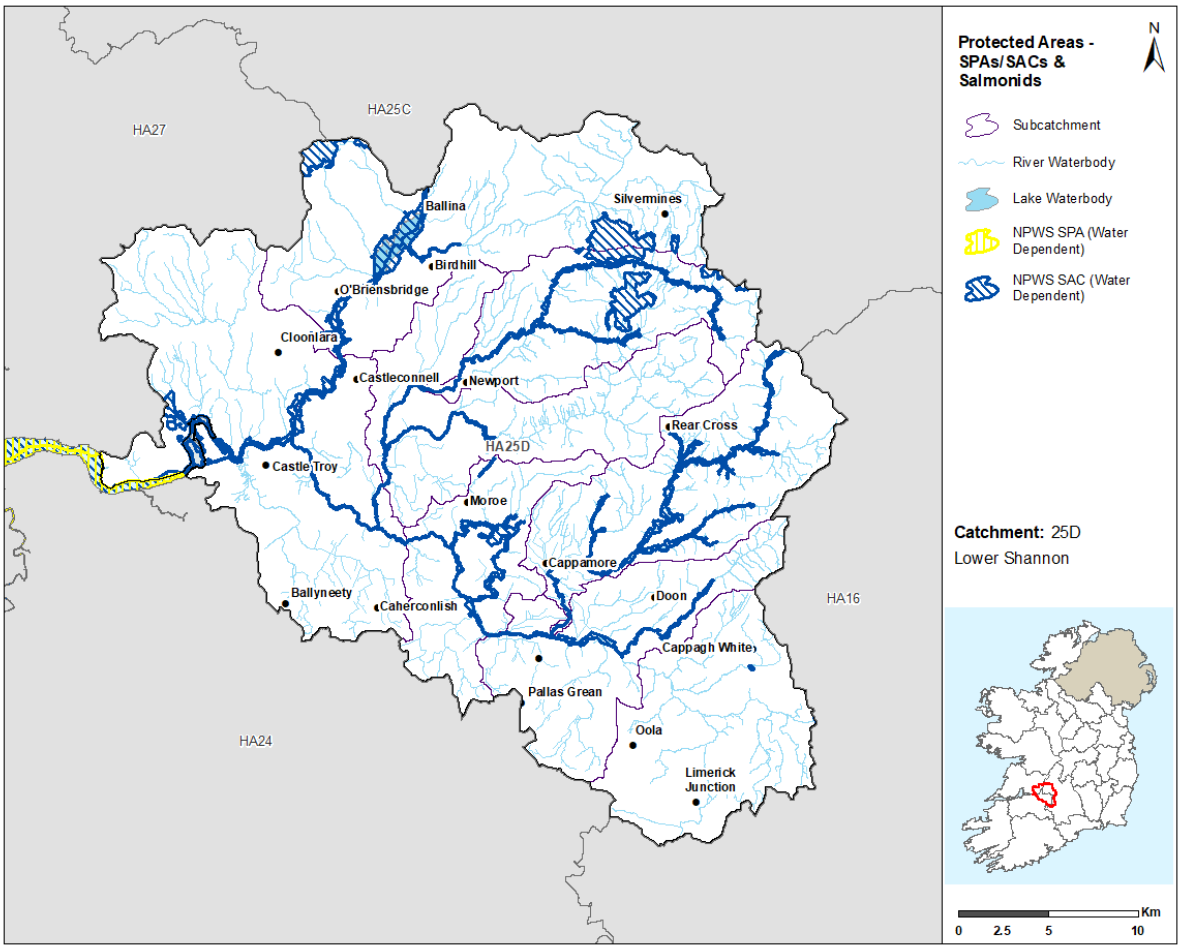


Figure 6: Water Dependent SPAs / SACs

2.2.5 Nutrient Sensitive Areas

- There are no Nutrient Sensitive Areas in the catchment.

2.3 Heavily Modified Waterbodies

- Based on the 1st and 2nd RBMPs there are currently two designated heavily modified water body (HMWB) in the Lower Shannon & Mulkear catchment; Derg HMWB due to power generation and Limerick Dock due to port facilities. Both HMWBs were classified as having Good Ecological Potential in 2013-18. There will be a consultation period on HMWBs for the 3rd Cycle RBMP and this will be completed for inclusion in the 3rd Cycle Final RBMP.

2.4 Artificial Waterbodies

- There are no Artificial Waterbodies (AWBs) present in the Lower Shannon and Mulkear Catchment.

3 Waterbody Risk

3.1 Overview of Risk

- A waterbody that is *At Risk* means that either the waterbody is currently not achieving its Water Framework Directive (WFD) environmental objective of Good or High Ecological Status or that

there is an upward trend in nutrients or ammonia and if this trend continues the waterbody Status will decline by the end of Cycle 3 and will fail to meet its environmental objective.

- A waterbody can be considered as *Review* for the following three reasons:
    - The waterbody does not have status assigned to it yet, it is referred to as an unassigned waterbody, and therefore there is not enough evidence to determine if it is *At Risk* or *Not At Risk*.
    - The waterbody has shown some slight evidence or improvement, but more evidence is needed before it can be considered as *Not At Risk.*
    - Measures are planned or have already been implemented for the waterbody and no further measures should be applied until there is enough time to assess if these measures are working.

- A waterbody is *Not At Risk* when it is achieving its environmental objective of either High or Good Status and that there is no evidence indicating that there is a trend towards status decline.

- In total, there are 81 waterbodies in the Lower Shannon and Mulkear Catchment and 26 (32%) are currently *At Risk*, 16 (20%) in *Review* and 39 (48%) are *Not At Risk*.

3.2 Surface Waters

- For the 48 rivers waterbodies, 18 (38%) are *At Risk*, five (10%) are in *Review* and 25 (52%) are *Not At Risk.*

- For the two lake waterbodies, one (50%) is *At Risk* and one (50%) is in *Review.* Derg TN is the lake waterbody *At Risk.*

- For the two transitional waterbodies, one (50%) is *At Risk* and one (50%) is in *Review*. The *At Risk* transitional waterbody is the Upper Shannon Estuary.

- The largest proportion of *At Risk* waterbodies are found in river waterbodies, accounting for 18 (69%) of 26 *At Risk* waterbodies. Figure 7 gives an overview of the breakdown of risk across waterbody types for both Cycle 2 and Cycle 3.

- Overall, there is an increase in two *At Risk* waterbody and five *Not At Risk* waterbodies, while there is a reduction of seven *Review* waterbodies between Cycle 2 and Cycle 3.

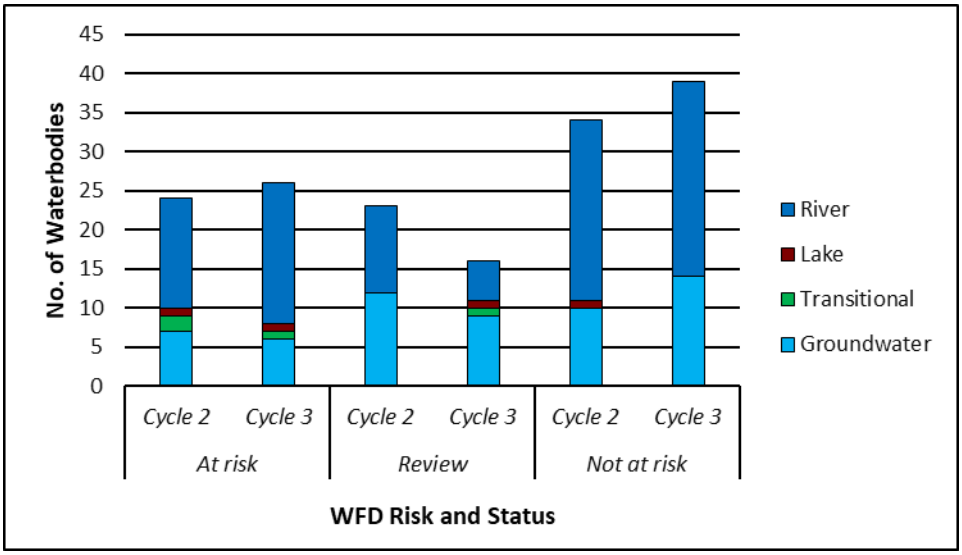


Figure 7: Number of waterbodies in each risk category

- The location of the *At Risk, Review and Not At Risk* surface waterbodies for Cycle 3 are shown in Figure 8 while the surface waterbodies that have experienced a change in risk between Cycle 2 and Cycle 3 are shown in Figure 9.

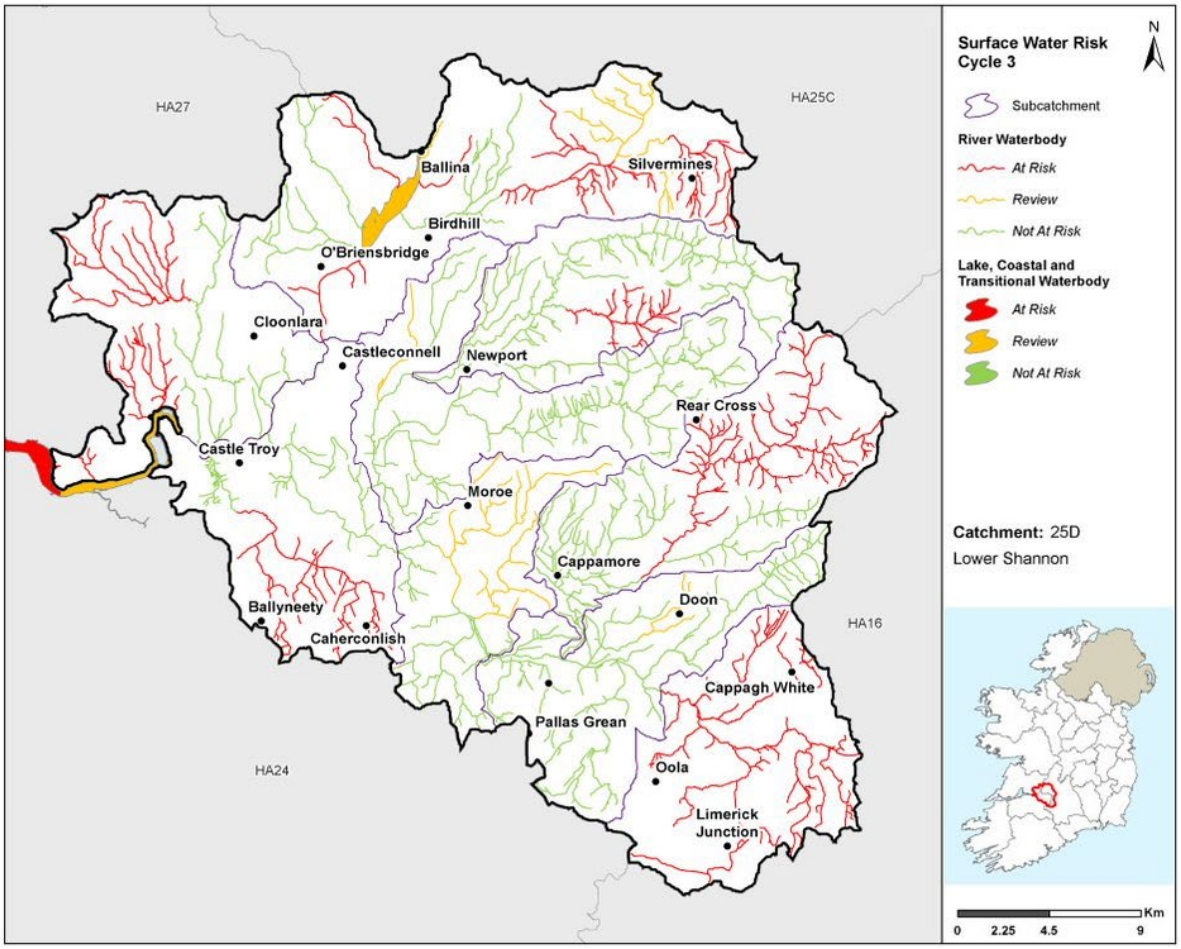


Figure 8: Surface Water Risk Cycle 3

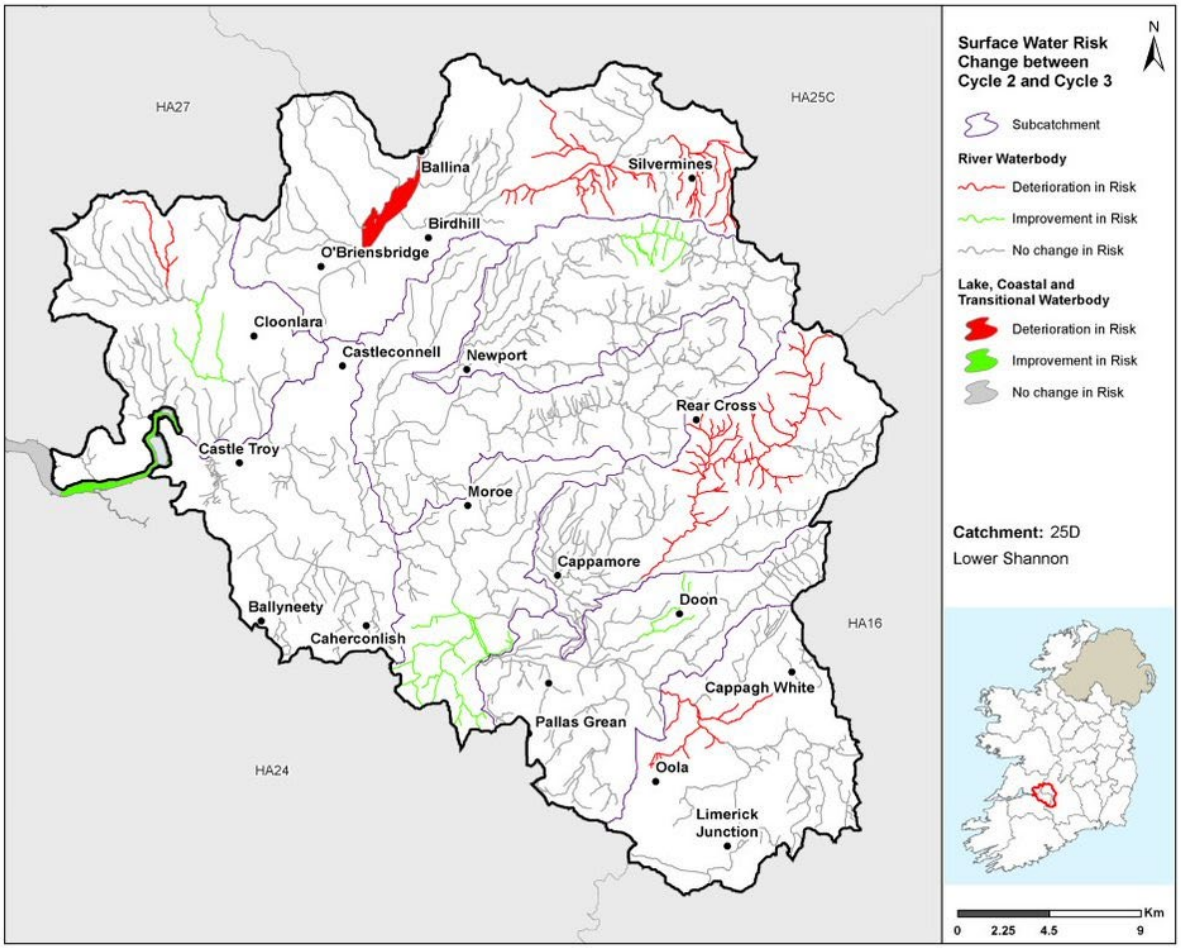


Figure 9: Surface Water Risk Change between Cycle 2 and Cycle 3

3.3 Groundwater

- For the 29 groundwater bodies, six (21%) are *At Risk*, nine (31%) are in *Review* and 14 (48%) are *Not At Risk*.

- In Cycle 2, there were seven groundwater bodies *At Risk* in this catchment, 12 in *Review* and 10 *Not At Risk*.

- The location of the *At Risk, Review and Not At Risk* groundwater bodies for Cycle 3 are shown in Figure 10 while the groundwater bodies that have experienced a change in risk between Cycle 2 and 3 are shown in Figure 11.

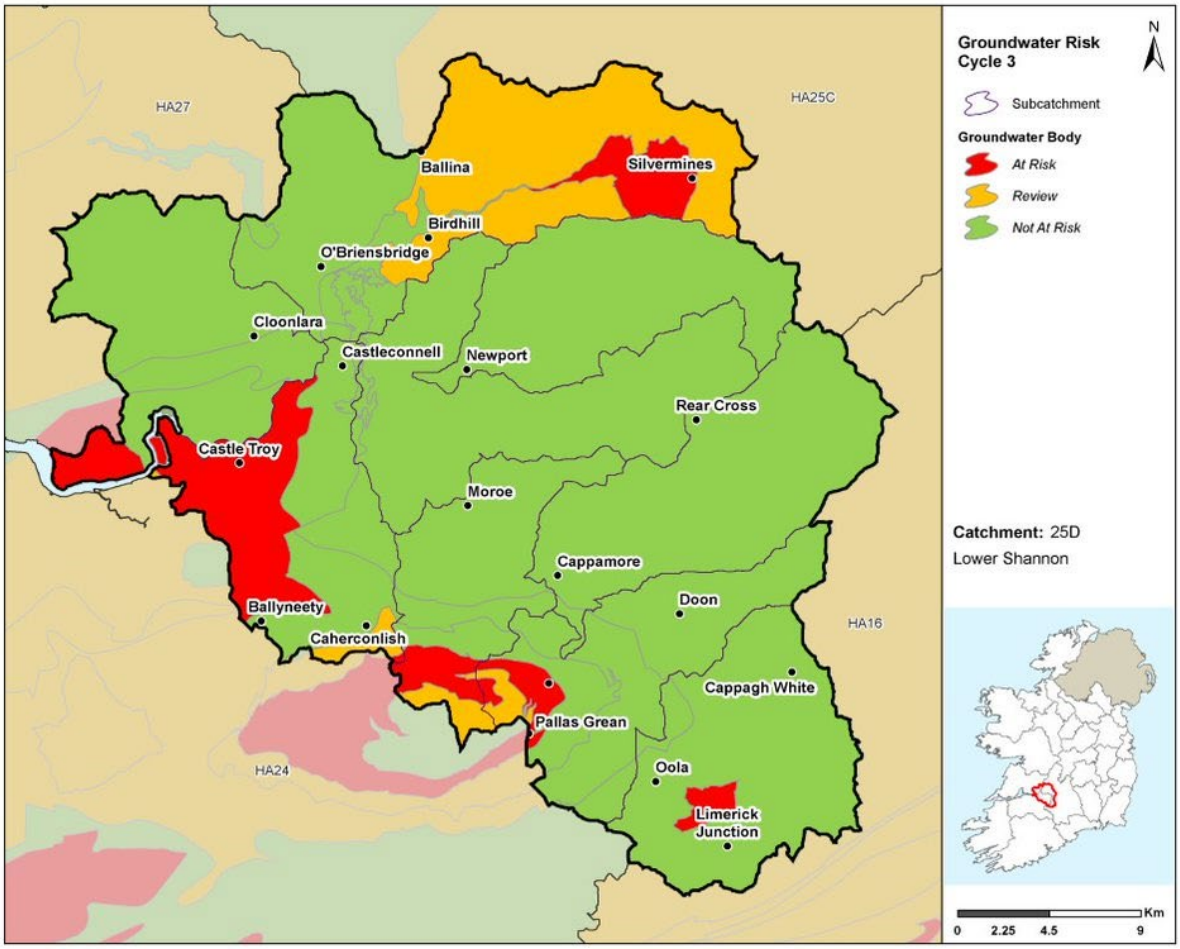


Figure 10: Cycle 3 Groundwater Body Risk

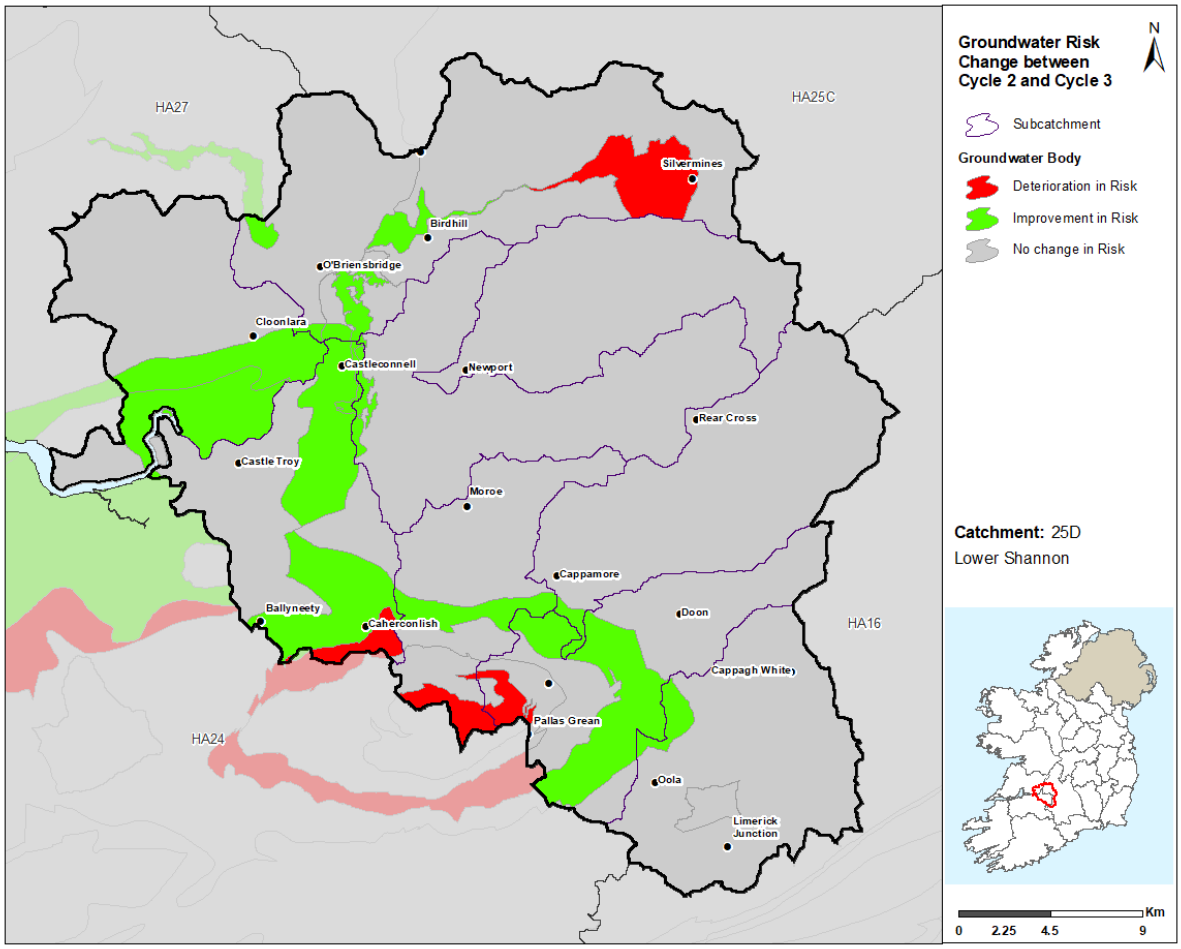


Figure 11: Groundwater Body Risk Change between Cycle 2 & Cycle 3

3.4 Heavily Modified Waterbodies

- Derg HMWB was *Not At Risk* in Cycle 2, but has been placed in *Review* for Cycle 3. Limerick Dock HMWB was *At Risk* in Cycle 2 but has also been placed in *Review* for Cycle 3. There may be changes to HMWB designation once the Cycle 3 HMWB assessment has been completed and consulted on for the 3rd Cycle Final RBMP.

3.5 Artificial Waterbodies

- There are no Artificial Waterbodies (AWBs) present in the Lower Shannon and Mulkear Catchment.

4 Significant Issues in *At Risk* Waterbodies

4.1 All Waterbodies

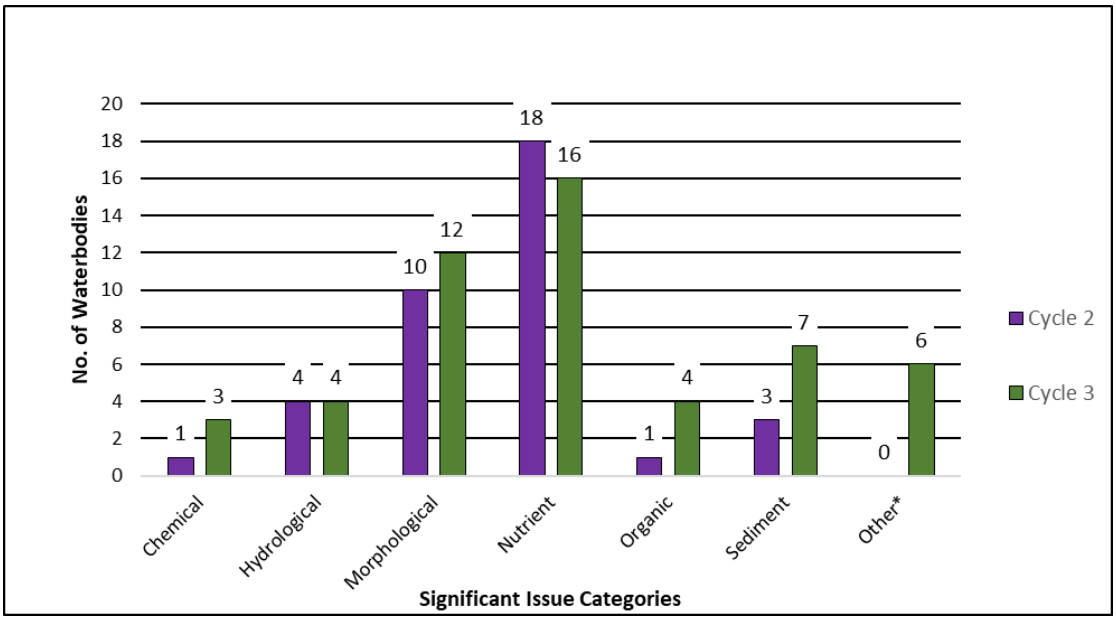
- Excess nutrients and morphological impacts remain the most prevalent issues in the Lower Shannon and Mulkear catchment (Figure 12) impacting 16 and 12 waterbodies respectively in Cycle 3. The greatest change in impact is in the sediment category which is impacting seven waterbodies in Cycle 3, an increase of four waterbodies since Cycle 2. Organic and hydrological issues are each impacting four waterbodies and chemical pollution is impacting three waterbodies.

- For river waterbodies, the main significant issues are morphological impacts (11), nutrient pollution (10), sediment pollution (6), organic (4), hydrological impacts (3) and chemical pollution (1).
- For Derg TN lake waterbody, nutrient pollution, sediment, morphological impacts and hydrological impacts are all significant issues.
- For the one *At Risk* transitional waterbody (Upper Shannon Estuary) the significant issue is nutrient pollution.
- For the *At Risk* groundwater bodies, the significant issues are nutrient pollution (4) and chemical issues (2). Diminution of quality of associated surface waters for chemical reasons has also been identified as an issue in all six *At Risk* groundwaters in Cycle 3.

- Between Cycle 2 and Cycle 3 the number of waterbodies with sediment issues have increased by four from three to seven and the number of waterbodies impacted by organic pollution has increased by three, from one to four waterbodies impacted in Cycle 3. Chemical pollution and morphological issues have increased by two waterbodies each, from one to three and from 10 to 12 respectively.

- The number of waterbodies with hydrological issues has remained at four between Cycle 2 and Cycle 3.

- The number of waterbodies impacted by nutrient pollution has decreased from 18 in Cycle 2 to 16 in Cycle 3.



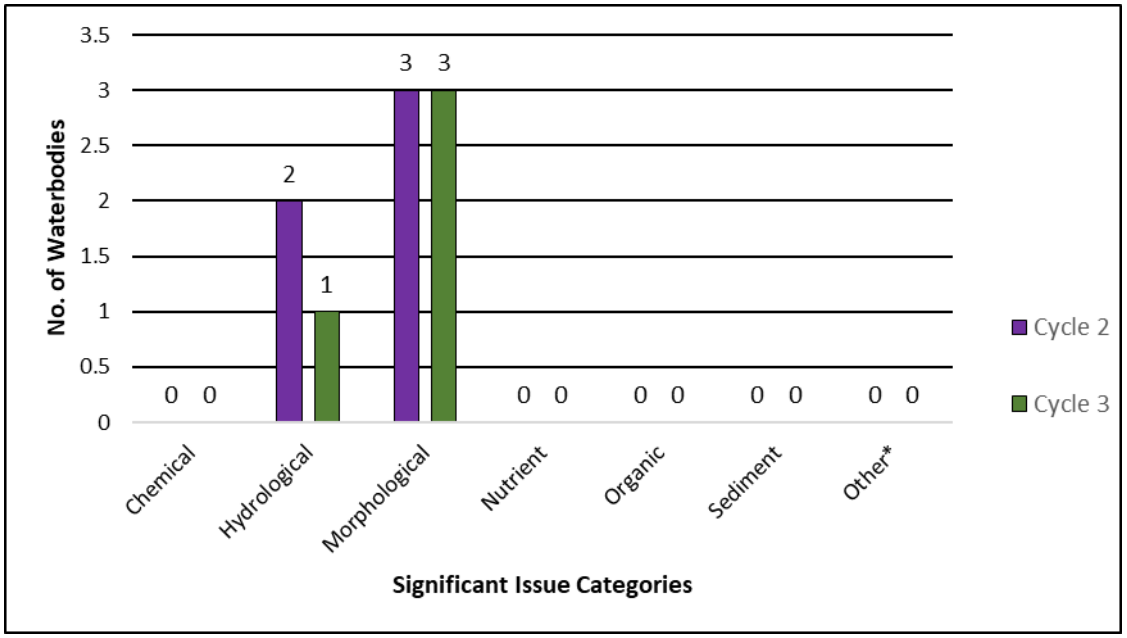
*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 12: Significant Issues across all *At Risk* WBs between Cycle 2 and Cycle 3

4.2 High Status Objective Waterbodies

- In Cycle 3 for High Status Objective waterbodies, morphological issues are impacting all three of the High Status Objective waterbodies currently *At Risk* (Figure 13). This is followed by hydrological impacts which are impacting one waterbody.
  - All High Status Objective waterbodies in the Lower Shannon and Mulkear Catchment are river waterbodies.

- Between Cycle 2 and Cycle 3, the number of waterbodies with morphological issues has remained unchanged while those with nutrient issues have reduced by one waterbody.



*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

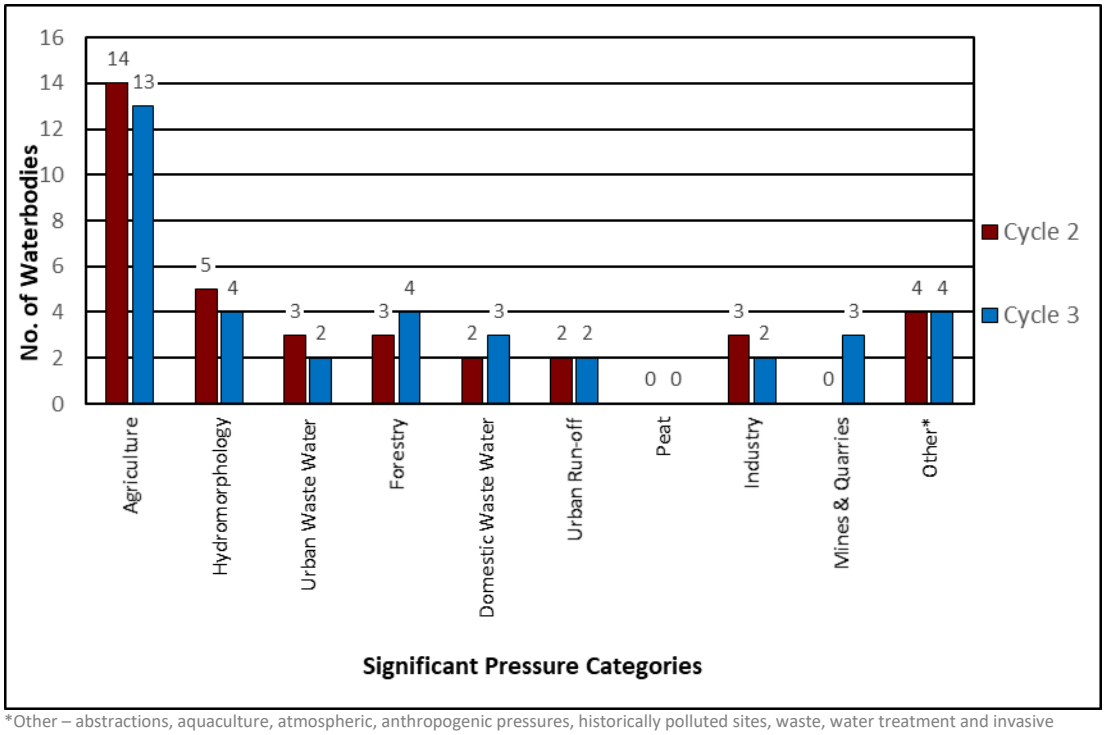
Figure 13: Significant Issues in *At Risk* High Status Objective Waterbodies

5 Significant pressures in *At Risk* Waterbodies

5.1 All Waterbodies

- Where waterbodies have been classed as *At Risk*, significant pressures have been identified.
- Figure 14 shows a breakdown of the number of *At Risk* waterbodies in each significant pressure category.
- The significant pressure affecting the greatest number of waterbodies is agriculture, followed by hydromorphology, forestry, other[6], domestic waste water, mines and quarries, urban waste water, urban run-off and industry.
- When comparing Cycle 2 and Cycle 3, the biggest change is an increase of three waterbodies where mines and quarries are a significant pressure from no waterbodies in Cycle 2 to three waterbodies in Cycle 3.

[6] Abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report



*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 14: Significant Pressure (All *At Risk* Waterbodies)

5.1.1 Pressure Type

5.1.1.1 Agriculture

- Agriculture is a significant pressure in 13 waterbodies across several subcatchments. The issues related to farming in this catchment are diffuse phosphorus loss to surface waters, for example, direct discharges; or runoff from yards, roadways or other compacted surfaces, or runoff from poorly draining soils. Sediment can also be a problem from land drainage works, bank erosion from animal access or stream crossings. These impacted surface waters may be in turn, hydrologically connected to areas where groundwater contribution of phosphate is having an impact. Eight river waterbodies are impacted, one transitional waterbody (Upper Shannon Estuary) and three groundwater bodies (Hertbertstown, Limerick City East and Limerick City Northwest).

5.1.1.2 Hydromorphology

- Doonane_010 and Grange (Tipperary)_010 river waterbodies are both subject to channelization which is deemed to be impacting habitat condition due to hydrological and morphological changes in the waterbodies. Dams, Barriers, Locks and Weirs is the hydromorphological sub-pressures category attributed to Shannon (Lower)_050 and Derg TN waterbodies. IFI have noted that an impoundment has resulted in the loss of spawning grounds in Shannon (Lower)_050. In Derg TN lake waterbody, it is noted that the water levels are artificially maintained. An extensive network of field drains and ditches and an absence of buffers around the drains has been recorded throughout the catchment by LAWPRO during Cycle 2, Cauteen_010 and Dead_010 river waterbodies are impacted by land drainage which are causing alterations to habitat due to morphological changes in the rivers. Mountrice_010 is potentially impacted by overgrazing which is altering habitat through changes in river morphology.

5.1.1.3 Forestry

- Forestry has been identified as a significant pressure in four river waterbodies – Toem Stream_010, Blackwater (Clare)_010, Bilboa_010 and Inch (Bilboa)_010. The significant issues are a combination of general forestry practices such as road construction, planting and clearfelling, which have resulted in heavy siltation. Bilboa_010 has been added in Cycle 3, clearfelling for windfarms is a significant pressure on this waterbody but the use of silt traps has now been enforced. The waterbody is also under significant thinning and replanting pressures, with oxygen conditions significantly impacted.

5.1.1.4 Other

- *Invasive species*
  One lake waterbody (Derg TN) has zebra mussels present, which have been identified as a significant pressure. In addition, this lake waterbody has Asian clams and up to 14 other alien species according to IFI and the Lough Derg Science Group. The bank of the river waterbody Toem Stream_010 was reported to be infested with Giant Hogweed.

- *Unknown Anthropogenic*
  The significant pressure on Pallas Grean groundwater is unknown.

- *Historically Polluted Sites*
  A historic mine is a significant pressure on one groundwater body, Historic Mines (Silvermines), with high level of Arsenic, Mercury, and Lead.

5.1.1.5 Domestic Waste Water

- Domestic waste water has been identified as a significant pressure in two river waterbodies, Whitehall_010 and Dead_020. Whilst there is a high concentration of domestic waste water treatment systems on the upper catchment that are likely to be affecting water quality, there is also potential that due to the size of the Whitehall_010 stream it may never achieve an improvement on Q3 due to lack of species diversity. Further characterisation is therefore required.

5.1.1.6 Mines and Quarries

- *Mines and Quarries*
  Mines have been identified as a significant pressure in three river waterbodies (Kilmastulla_010, Kilmastulla_030 and Kilmastulla_040). The issues relate to elevated heavy metal concentrations from the historic Silvermines zinc and lead mining site.

5.1.1.7 Urban Waste Water

- Urban Waste Water Treatment Plants (WWTPs) have been identified as a significant pressure in two *At Risk* water bodies; details are given in Table 5. None of the two agglomerations (Cappawhite and Ballina) identified as significant pressures are scheduled for upgrades under Irish Water's Capital Investment Programme (2020-2024). Three waterbodies were impacted by urban wastewater in Cycle 2 and two are impacted in Cycle 3.

Table 3: Urban Waste Water Treatment Agglomerations identified as significant pressures in *At Risk* waterbodies in Cycle 3

Facility name	Facility Type	Waterbody	2013-18 Ecological Status	Irish Water's Expected CIP Completion Date[7]
Cappawhite D0440	Agglomeration PE of 500 to 1,000	Cappawhite Stream_010	Poor	N/A
Ballina D0016	Agglomeration PE of 2,001 to 10,000	Grange (Tipperary)_010	Unassigned	2024

5.1.1.8 Urban Run-off

- Diffuse urban pressures, caused by misconnections, leaking sewers and runoff from paved and unpaved areas, have been identified as a significant pressure in two river waterbodies (Groody_010 and Whitehall_010). Nutrient and organic pollution are the significant issues.

5.1.1.9 Industry

- Industry has been identified as a significant pressure in one river waterbody (Dead_010) where a Section 4 is causing nutrient pollution. The groundwater body, Industrial facility (P0331-01), is impacted by elevated Polycyclic aromatic hydrocarbons (PAH) concentrations in discharges from an EPA licensed facility, Spaight Timber Preservatives Limited.

Table 4: Breakdown of Cycle 3 Industry Significant Pressures in the Lower Shannon and Mulkear Catchment

Waterbody Code	Waterbody Name	Waterbody Type	Emission Type	Name	Impact
IE_SH_25D010100	DEAD_010	River	Section 4	N/A*	Nutrient
IE_SH_G_219	Industrial Facility (P0331-01)	Groundwater	IPC	Spaight Timber Preservatives Limited	Chemical

*Name of facility not provided during characterisation

Figure 15 – Figure 18 illustrates the locations of waterbodies for the four most common pressures in order of prevalence (agriculture, hydromorphology, forestry and other) within the catchment in Cycle 3.

[7] Based on Irish Water's Capital Investment Programme (2020-2024) as of February 2021 and may be subject to change.

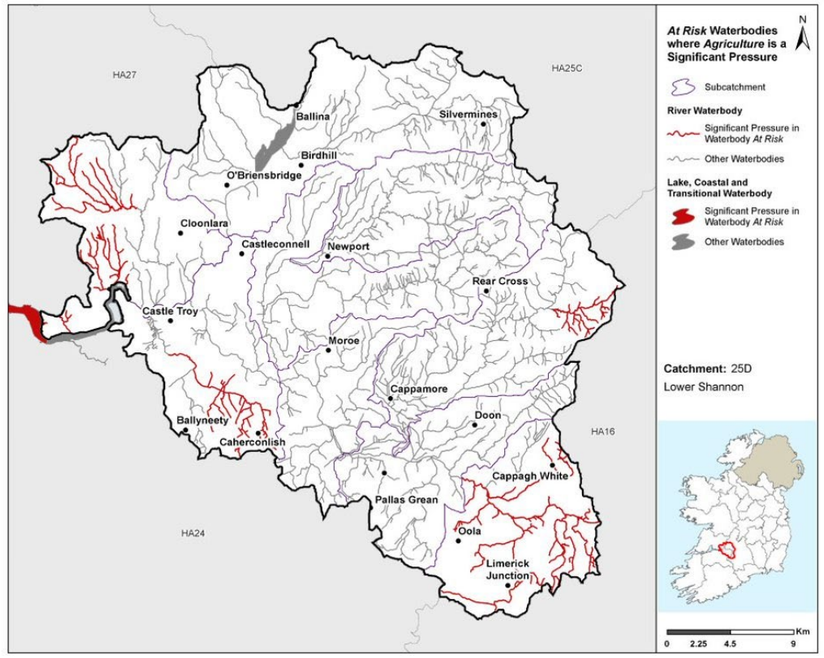


Figure 15: Locations of Waterbodies where Agriculture is a Significant Pressure

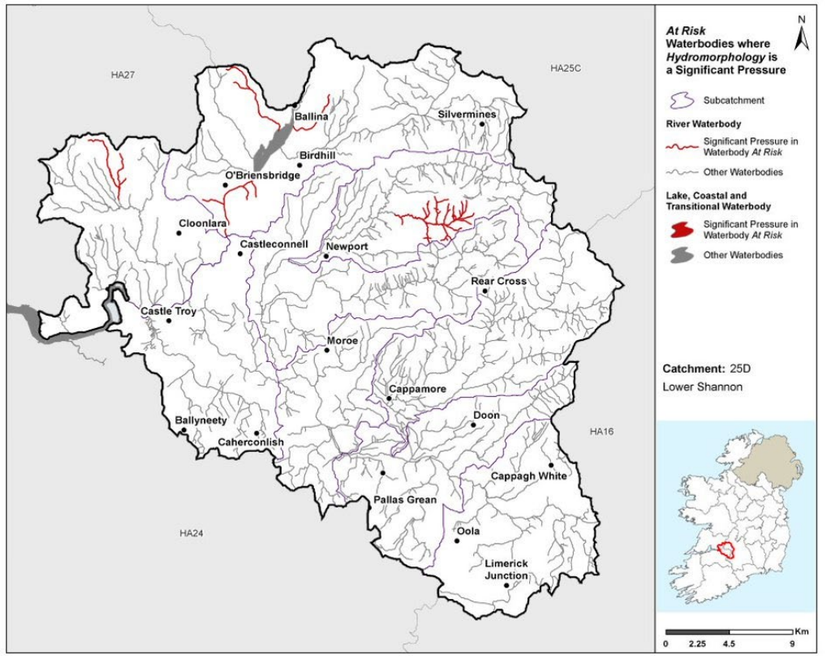


Figure 16: Locations of Waterbodies where Hydromorphology is a Significant Pressure

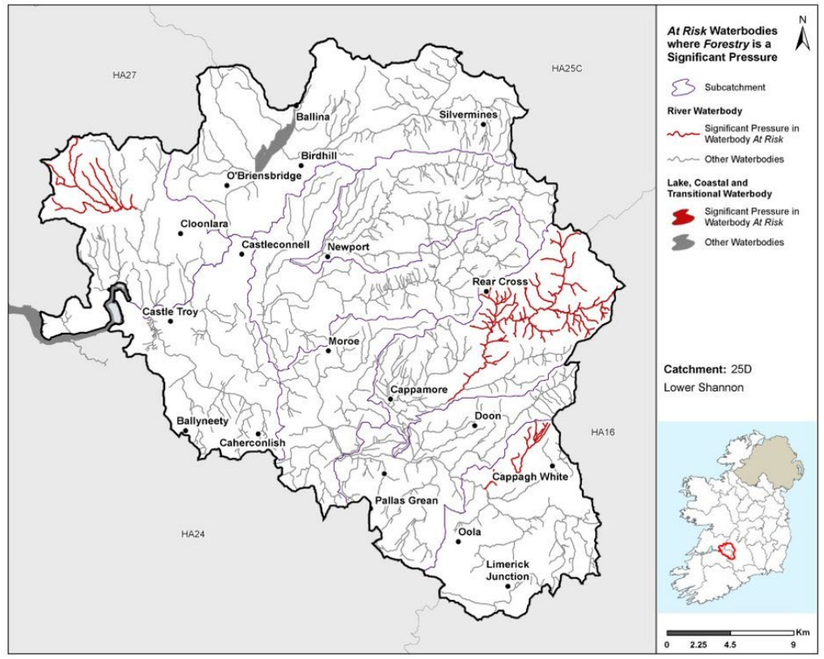


Figure 17: Locations of Waterbodies where Forestry is a Significant Pressure

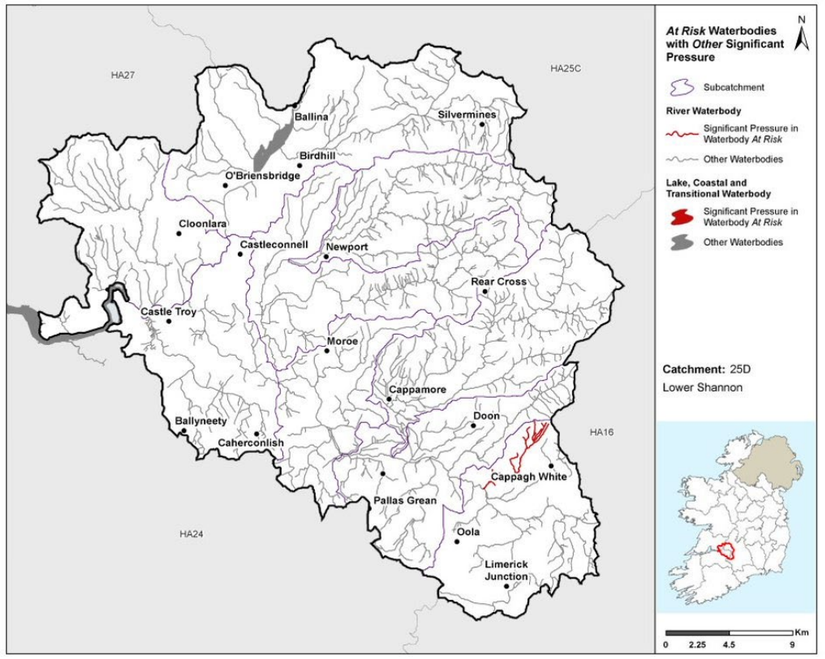
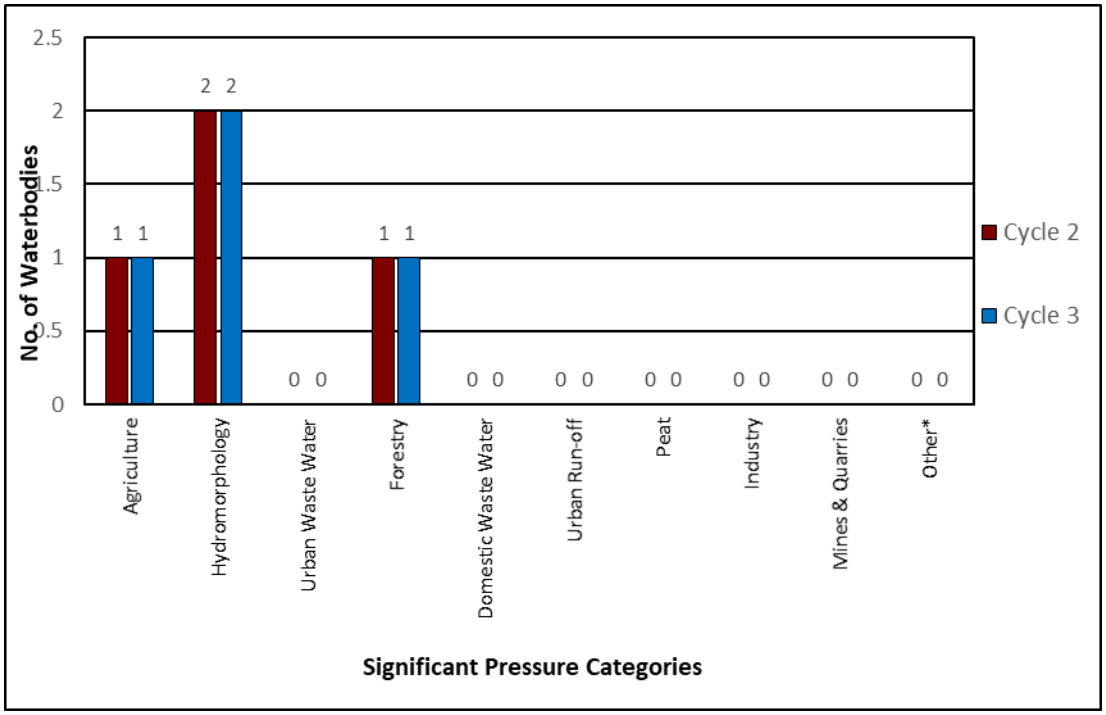


Figure 18: Locations of Waterbodies where Other Pressures is a Significant Pressure

5.2 High Status Objective Waterbodies

- Hydromorphology is also the dominant significant pressure in High Status Objective waterbodies, with hydromorphological pressures identified in two out of the three *At Risk* High Status Objective waterbodies.



*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 19: Significant Pressure in *At Risk* High Status Objective Waterbodies

6 Source Load Apportionment Modelling (SLAM)

- The EPA has developed Source Load Apportionment Models (SLAM) for both P and N which estimate the proportion of the phosphorus and nitrogen inputs, respectively, to waters in each catchment that comes from each sector.

- The main data inputs for the model for agriculture are the 2018 land parcel (LPIS) and animal (AIMs) data from the Department of Agriculture Food and the Marine. The Urban Waste Water (UWW) data comes from Irish Water's discharge monitoring data. The model also calculates the inputs from a range of other sectors, including for example, forestry, septic tanks, peat, urban runoff and atmospheric deposition.

- In the catchment pasture is responsible for 84% and 9% of the nitrogen load while land in pasture, forestry and discharges from urban waste water contribute 36%, 25% and 21% of the phosphorus loadings for the catchment respectively (Figure 17).

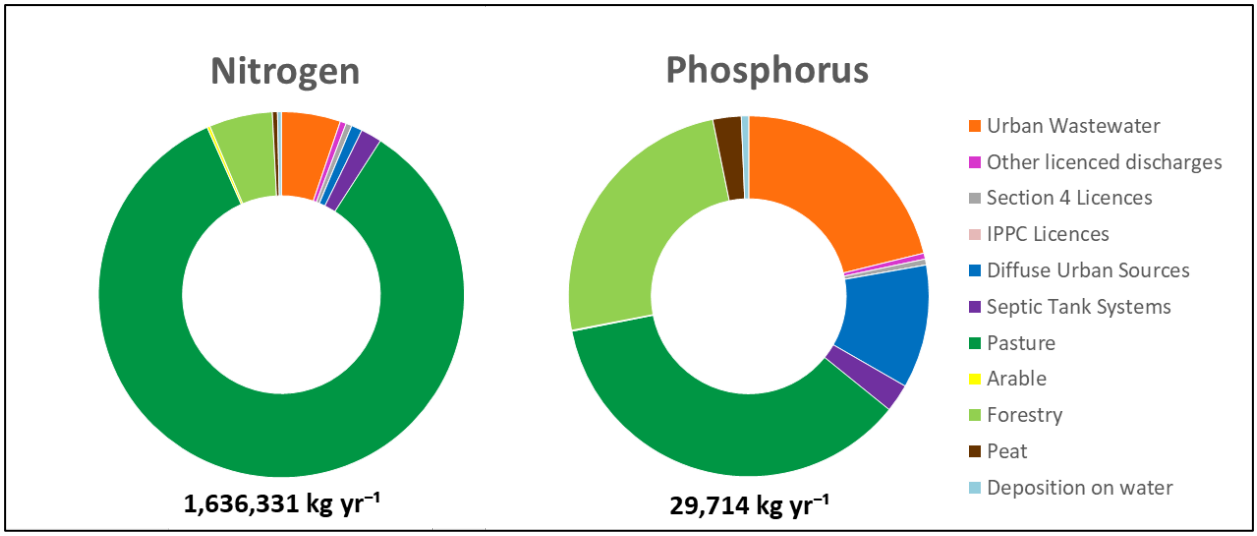


Figure 20: Estimated Proportions of N & P from Each Sector in the Lower Shannon and Mulkear Catchment

7 Load Reduction Assessment

7.1 Nitrogen Load Reduction

- An assessment was undertaken to determine if nitrogen reductions in rivers, streams and lakes are required for Transitional and Coastal (TRACs) waterbodies to achieve their WFD environmental objective. The outcome of the assessment indicated that 10 of the 46 catchments require N reductions in our inland waters to restore some TRAC waterbodies. Nitrogen load reduction to meet TRAC WFD objectives are not required in the Lower Shannon and Mulkear Catchment.

7.2 Phosphorus / Sediment Load Reduction

- Further modelling work is required to determine if and what P load reductions are required.

Figure 21 highlights areas where agricultural measures sediment and phosphorus should be targeted. Waterbodies blue fill are areas where sediment or phosphorus should be targeted. Pollution Impact Potential mapping for both phosphorus and nitrogen in the catchment are provided in Appendix 2.

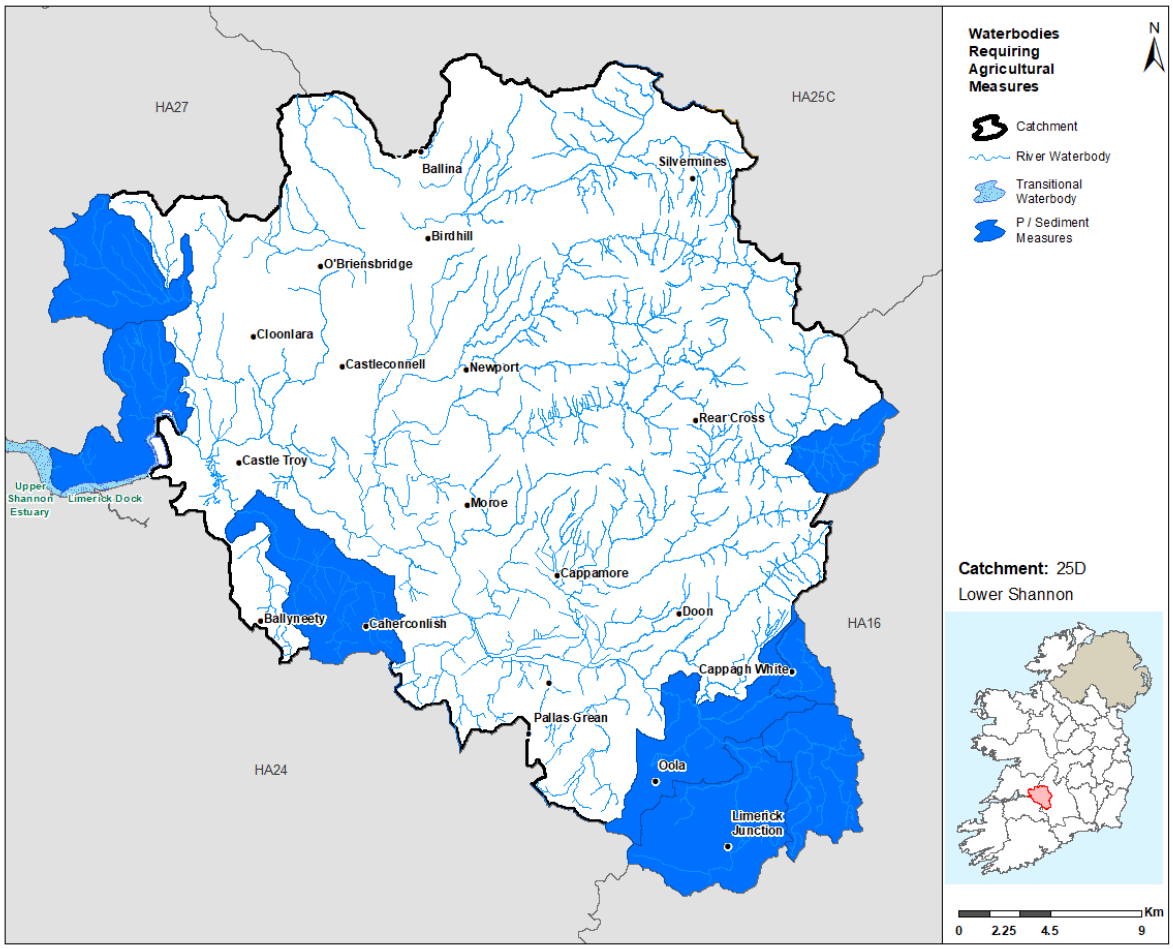


Figure 21: Waterbodies where Agricultural Measures should be Targeted

8 2nd Cycle Areas for Action

8.1 Area for Action Overview

- There were five Areas for Action, comprising of nine waterbodies, selected for further characterisation and action in the catchment for the 2nd Cycle River Basin Management Plan. The Areas for Action in the catchment are listed in Table 5 and shown in Figure 22. LAWPRO, in conjunction with local authorities and stakeholders from the South Western and South Eastern Regional Operational Committee, have been working in these areas since 2018.

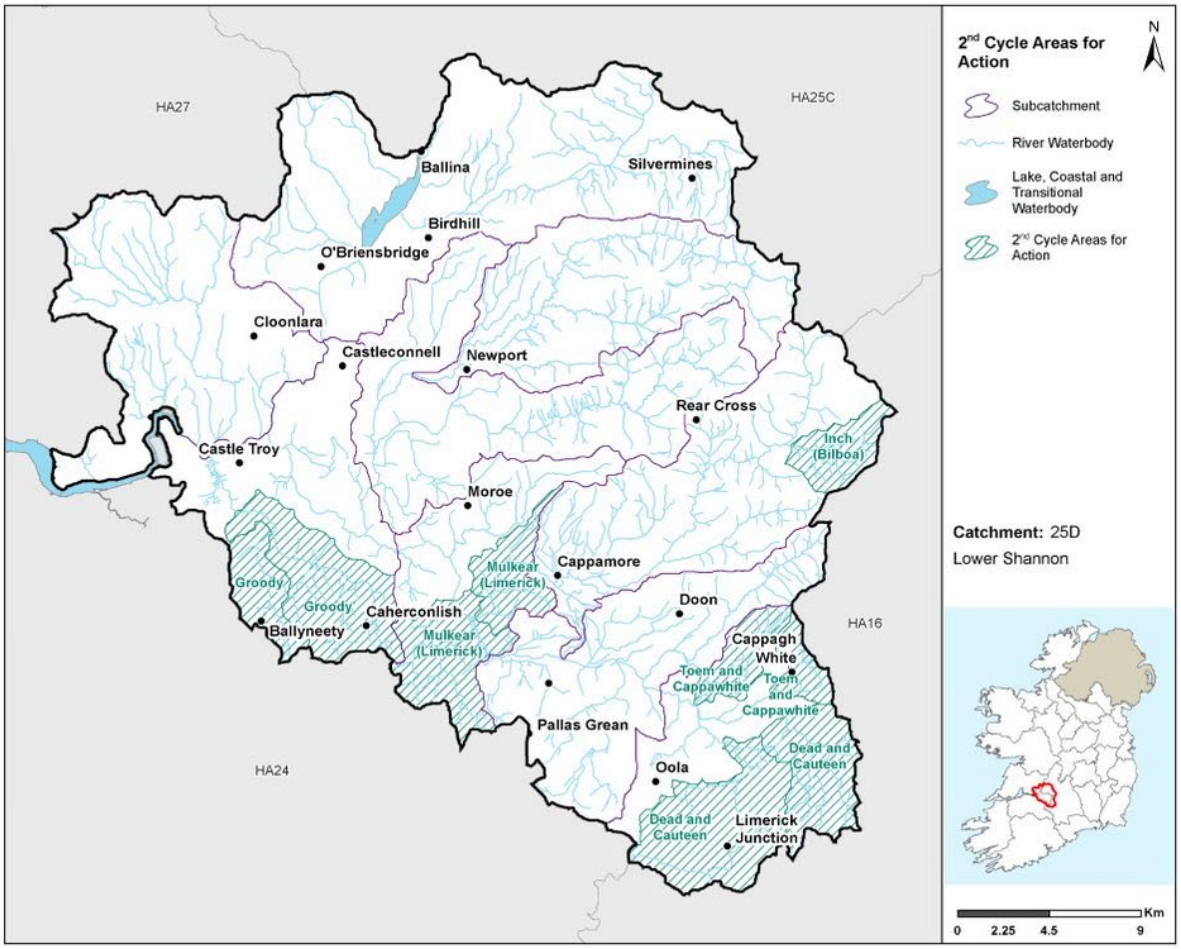


Figure 22: 2nd Cycle Areas for Action Locations

Table 5: 2nd Cycle Areas for Action

2nd Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Reason for Selection
Groody	2	25D_9	Limerick	• Building on improvement to fishery; salmon has returned to the lower section of the river. • Zoned for amenity use in Local Area Plan. • Active community interest, including Caherconlish tidy towns. • Urban stream. • Potential to tie in with Limerick regeneration project. • 1 potential 'quick win'.
Mulkear (Limerick)	2	25D_8	Limerick	• Building on completed and ongoing work by the MulkearLIFE project. • Building on improvements from in-stream works. • Important trout spawning streams. • Failing to meet protected area

2nd Cycle Area for Action	Number of waterbodies	Sub-catchment	Local Authority	Reason for Selection
				objective for salmon. • 1 deteriorated waterbody.
Toem and Cappawhite	2	25D_2	Tipperary	• Opportunity to look at integration of planning and forestry activities. • Potential to link with the Mulkear After LIFE Plan • Important salmon spawning rivers. • Headwaters to the river Dead. • 1 deteriorated waterbody.
Inch (Bilboa)	1	25D_5	Tipperary	• Opportunity to look at integration of planning and forestry activities. • Headwaters of 1 of the most important spawning streams in the system. • 1 deteriorated waterbody. • Waterbody is not meeting protected area objectives for Salmon.
Dead and Cauteen	2	25D_2	Tipperary	• Headwaters to the river Cauteen and the river Dead. • Strong local farming involvement • Opportunity to build on awareness initiatives by Limerick County Council.

8.2 Status Change in 2nd Cycle Areas for Action

- For Cycle 3, of the nine waterbodies in the 2nd Cycle Areas for Action, there is one waterbody at Good Status, four waterbodies at Moderate Status, two waterbodies at Poor Status and two waterbodies where status has not been assigned.

- There is an overall improvement in the status of one of the 2nd cycle Areas for Action waterbodies across the catchment.[8]

- Of the seven waterbodies within the 2nd Cycle Areas for Action which had status assigned, six experienced no change in status between Cycle 2 and Cycle 3 and one waterbody experienced an improvement (Figure 23). The one waterbody improvement is in the Mulkear (Limerick) Area for Action.

[8] Status class change cannot be calculated for waterbodies where status has not been assigned in either cycle 2 or 3 and therefore these waterbodies are not represented in Figure 18. Percentage displayed in the chart below are in relation to the total number of waterbodies with status assigned in both cycles, as opposed to total number of all waterbodies.

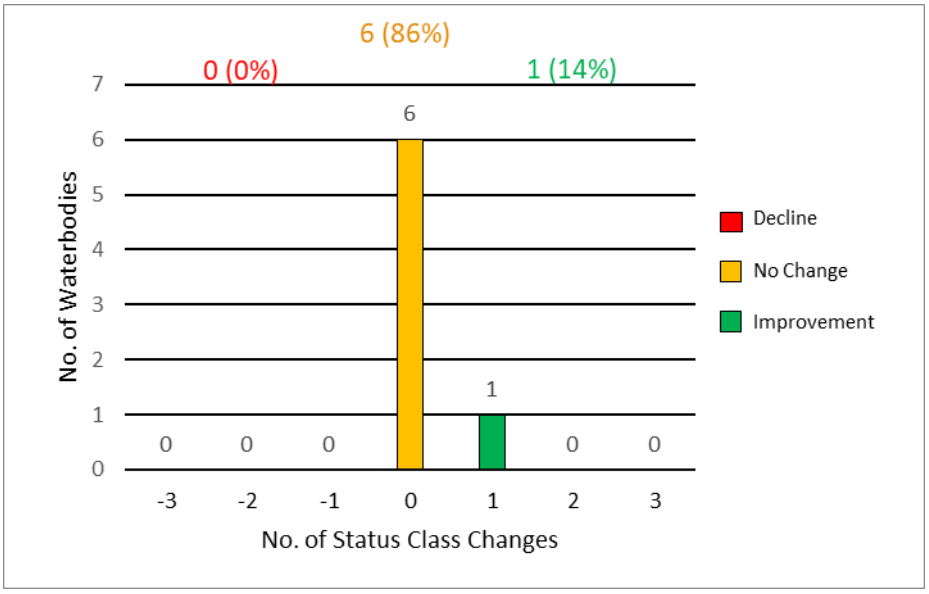


Figure 23: 2nd Cycle Area for Action Waterbody Status Class Changes between Cycle 2 and Cycle 3

8.3 Waterbody Risk in 2nd Cycle Areas for Action

- For the nine waterbodies in the 2nd Cycle Areas for Action, seven (78%) of these are currently *At Risk,* one (11%) is in *Review* and one (11%) is *Not At Risk*.

- All seven *At Risk* waterbodies are river waterbodies. Figure 24 gives an overview of the breakdown of risk across waterbody types for both Cycle 2 and Cycle 3 in 2nd Cycle Areas for Action.

- Overall there is a decrease from eight to seven *At Risk* waterbodies in 2nd Cycle Areas for Action between Cycle 2 and Cycle 3.

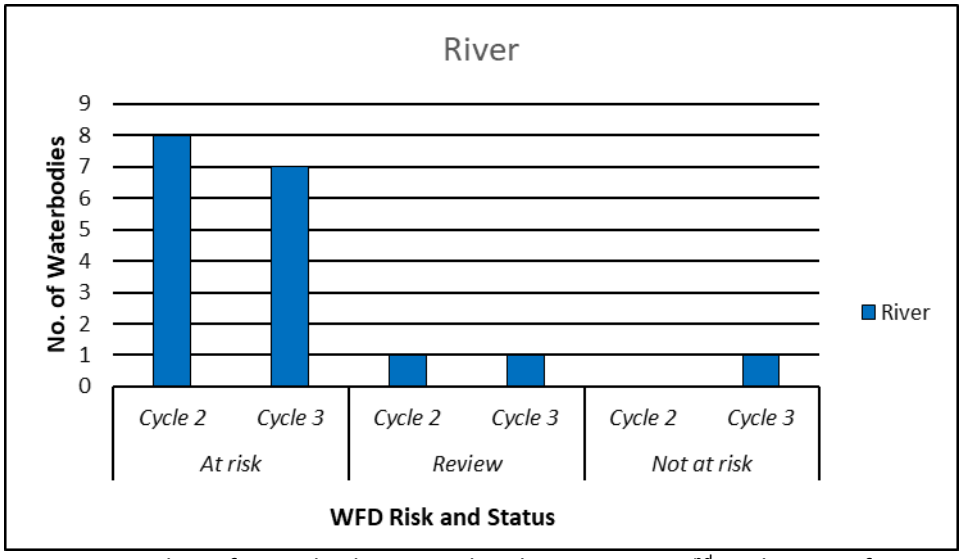
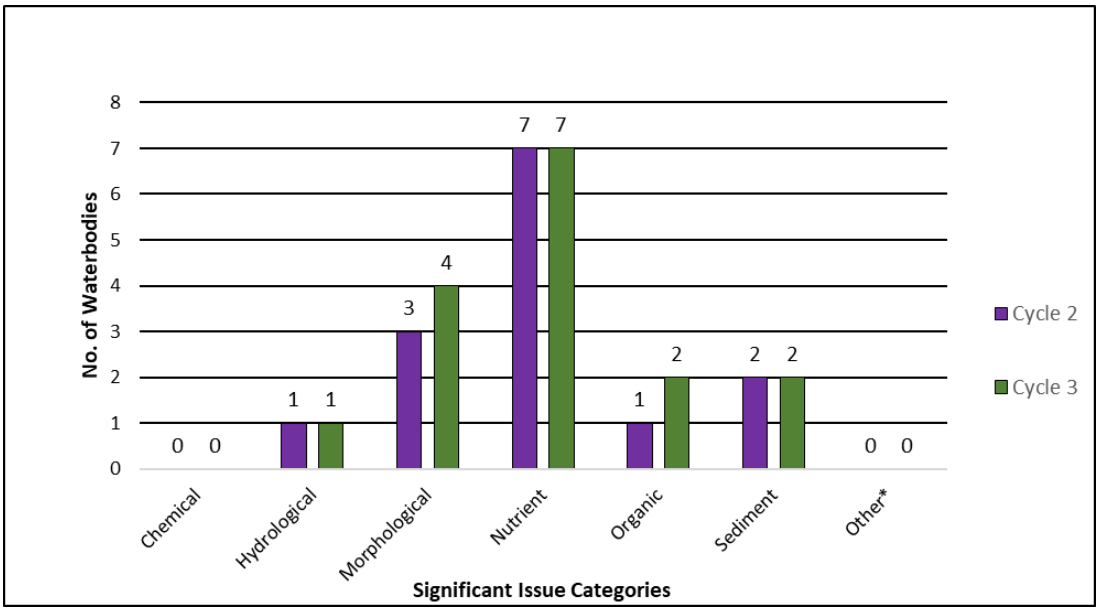


Figure 24: Number of waterbodies in each risk category in 2nd Cycle Areas for Action

8.4 Significant Issues in 2nd Cycle Areas for Action

- Based on the EPA assessment for Cycle 3, the significant issue in the 2nd Cycle Areas for Action is nutrient pollution impacting seven waterbodies (Figure 25). This is followed by morphological issues (impacting four waterbodies), sediment and organic pollution (each impacting two waterbodies) while hydrological issues are impacting one waterbody.

- The number of 2nd Cycle Areas for Action waterbodies associated with each of the significant issues categories has remained somewhat unchanged between Cycle 2 and Cycle 3. Although there has been increases in waterbodies impacted by morphological issues organic pollution.

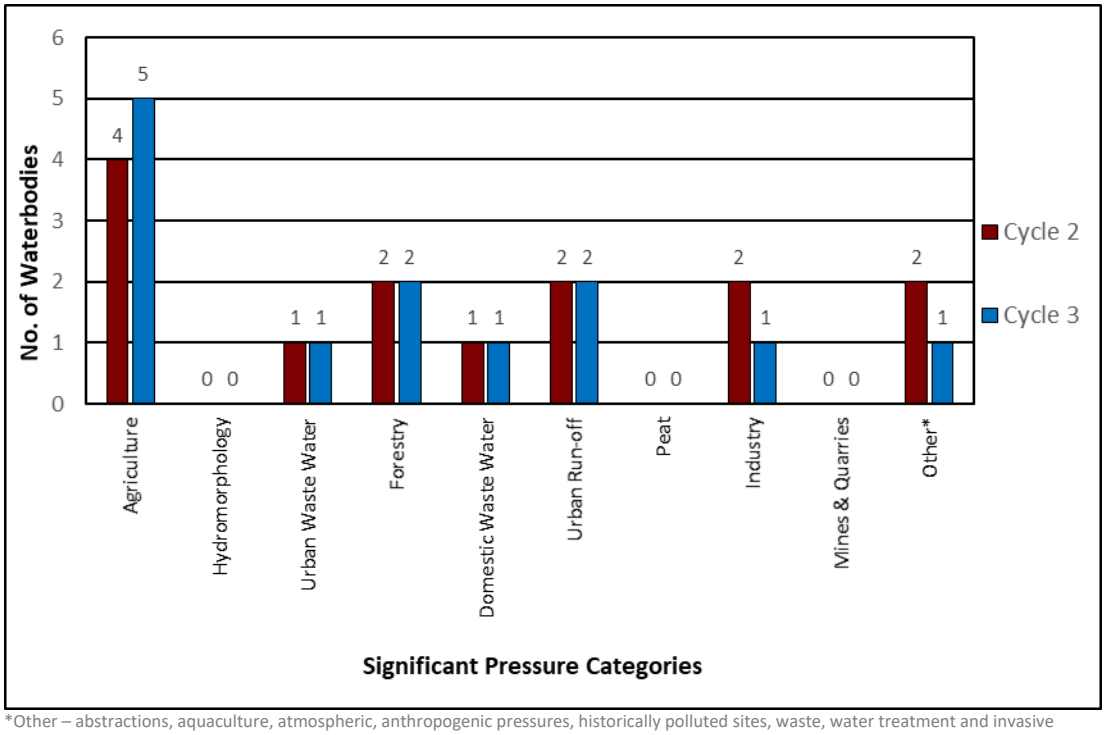


*Other - Acidification, saline intrusion, elevated temperature, litter, microbiological pollution and unknown impacts have all been grouped into the "Other" issues category for the purpose of this report

Figure 25: Significant Issues across all 2nd Cycle Areas for Action Waterbodies

8.5 Significant Pressure in 2nd Cycle Areas for Action

- For Cycle 3, in 2nd Cycle Areas for Action waterbodies in the catchment the dominant significant pressures are:
  - Agriculture – five waterbodies are impacted compared to four impacted in Cycle 2.
  - Hydromorphological pressures – two waterbodies are impacted by hydromorphological issues in Cycle 3 that were not identified during Cycle 2 characterisation.
  - Forestry and urban run-off are both impacting two waterbodies each which is unchanged compared to Cycle 2.
  - Industry and other pressures have both decreased by one waterbody when compared with Cycle 2 and they both now impact one waterbody each.
  - Urban waste water and domestic waste water are still impacting one waterbody each, the same number of waterbodies in Cycle 2.
- When comparing the significant pressures in the 2nd Cycle Areas for Action between Cycle 2 and 3 there has been a decrease or no change in all significant pressure categories in the catchment with the exception of agriculture which has decreased by one waterbody.



*Other – abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Figure 26: Significant Pressures in 2nd Cycle Area for Action Waterbodies

9 3rd Cycle Recommended Areas for Action

9.1 Recommended Areas for Action Overview

- For the 3rd Cycle Draft River Basin Management Plan Areas for Action have been extended out to not only include Prioritised Areas for Action undertaken by LAWPRO which focussed on restoring waterbodies, but to also include restoration work undertaken by all agencies under Areas for Restoration. In addition, protection work is included under Areas for Protection and research, pilot schemes and community initiatives are included under Catchment Projects. The aim of the 3rd Cycle Plan is to capture all activity that is working to restore, improve and/or protect waterbodies.

- There are 10 Recommended Areas for Action, comprising of 30 waterbodies, selected for further characterisation and action in the catchment for the 3rd Cycle River Basin Management Plan. 14 of the 30 waterbodies in the 3rd Cycle Recommended Areas for Action are *At Risk*, four are in *Review* and 12 are *Not At Risk.* The 10 Recommended Areas for Action consist of one Area for Protection, eight Areas for Restoration and one Catchment Project. LAWPRO are the proposed lead organisation in six Recommended Areas for Action, Mulkear EIP are the proposed lead in one Recommended Area for Action and NFGWS are the proposed lead on the remaining three Recommended Areas for Action. The Recommended Areas for Action in the catchment are listed in Table 6 and shown in Figure 27. The reason for selecting for each waterbody in a Recommended Area for Action is provided in Appendix 3.

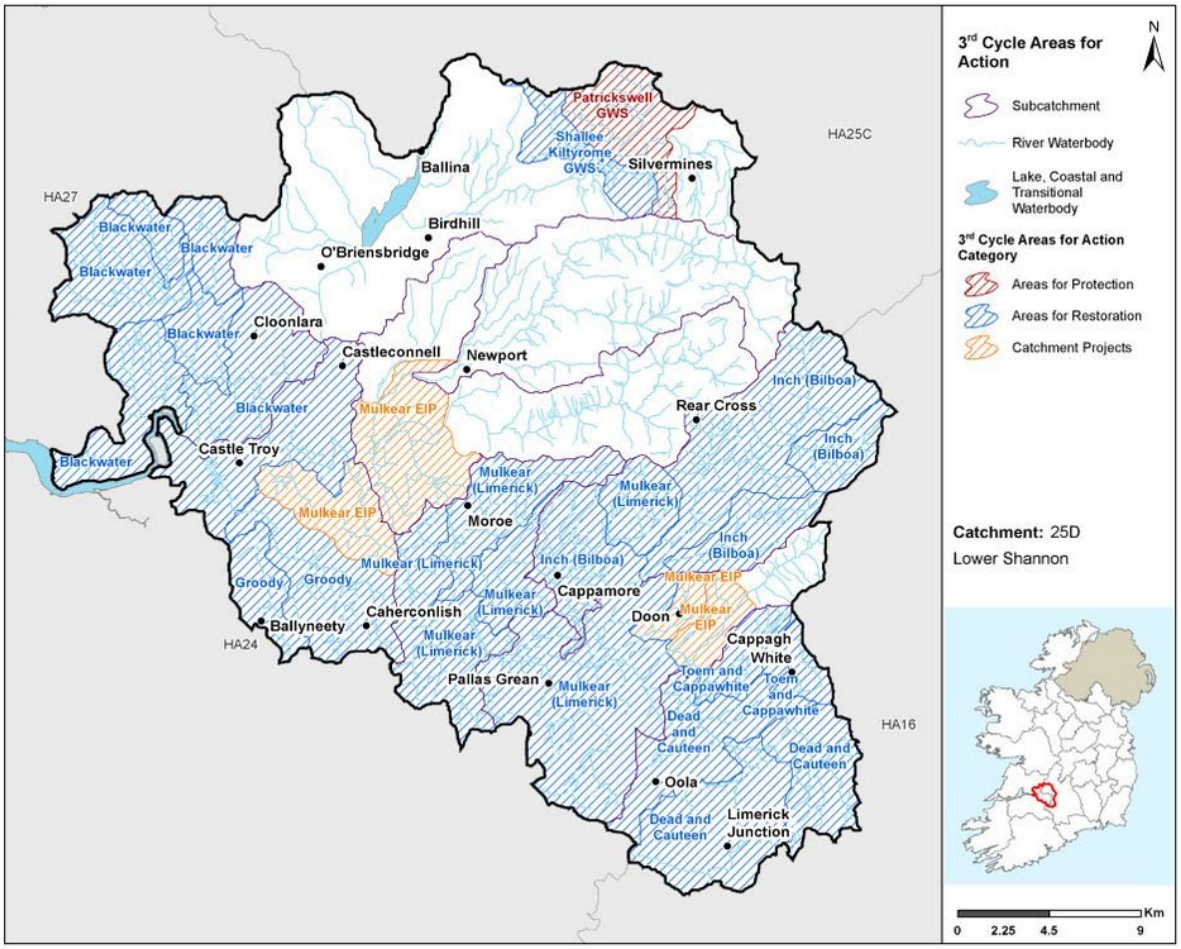


Figure 27: 3rd Cycle Recommended Areas for Action Locations

Table 6: 3rd Cycle Recommended Areas for Action Breakdown

3rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
Inch (Bilboa)	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Blackwater	6	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Mulkear EIP	4	Catchment Projects	EIP	Mulkear EIP
Dead and Cauteen	3	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Toem and Cappawhite	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Mulkear (Limerick)	5	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Groody	2	Restoration	Prioritised Areas for Action LAWPRO	LAWPRO
Patrickswell GWS	1	Protection	Public Health Areas for Protection	NFGWS

3rd Cycle Recommended Areas for Action	Number of Waterbodies	Recommended Areas for Action Category	Recommended Areas for Action Sub-category	Lead Organisation
			NFGWS, IW, HSE, LAs, SFPA	
Shallee Kiltyrome GWS	1	Restoration	Public Health Areas for Restoration NFGWS, IW, HSE, LAs, SFPA	NFGWS
L Derg Group Water Protection	1	Restoration	Public Health Areas for Restoration NFGWS, IW, HSE, LAs, SFPA	NFGWS

10 Catchment Summary

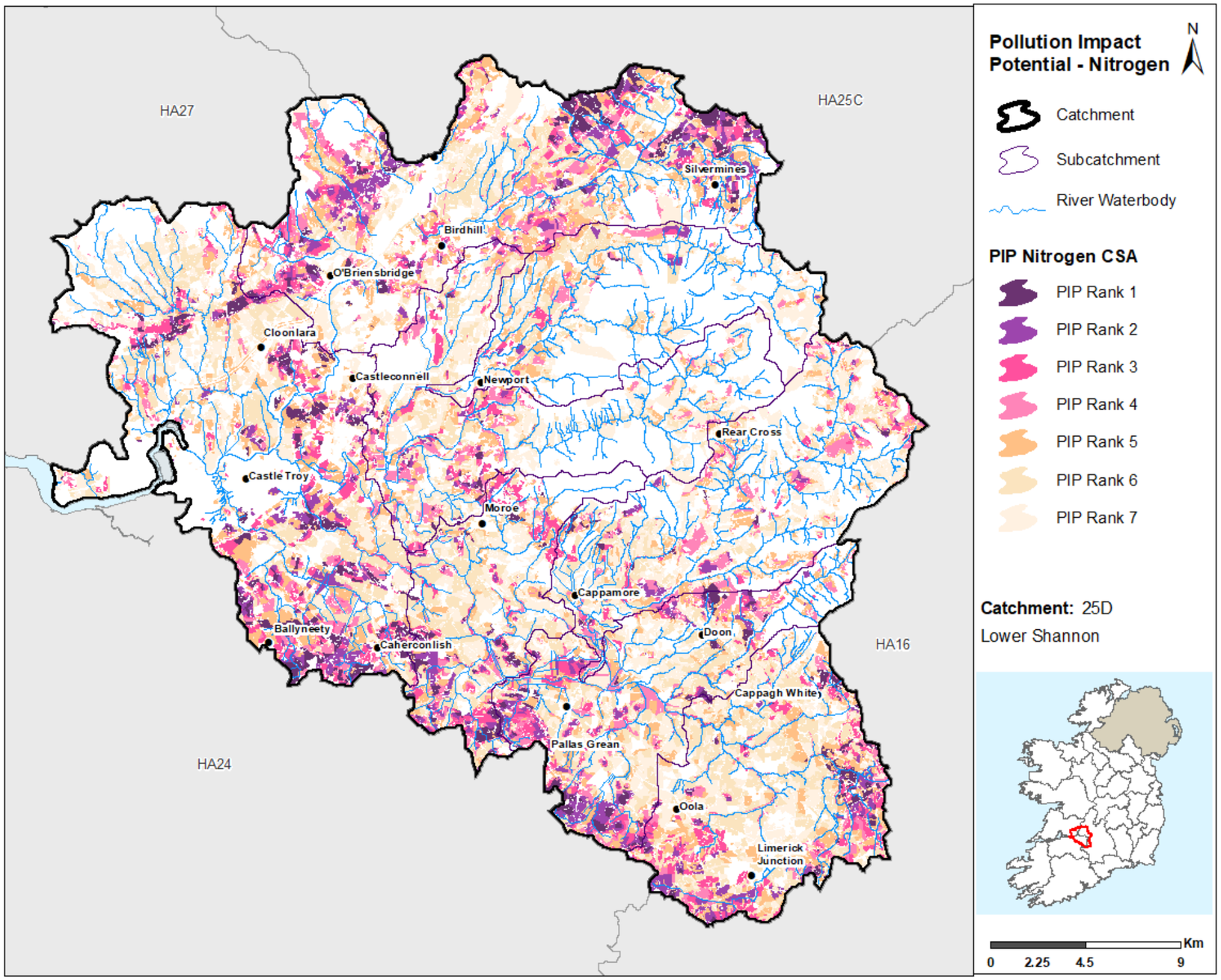
- Of the 48 river waterbodies, 18 are *At Risk* of not meeting their WFD objectives.
- One out of two lake waterbodies (Derg TN) is *At Risk* of not meeting its WFD objectives.
- One out of the two transitional waterbodies (Upper Shannon Estuary) is *At Risk*.
- Six out of 29 groundwater bodies are *At Risk.*
- There are 26 waterbodies *At Risk* in Cycle 3 compared to 24 waterbodies *At Risk* in Cycle 2.
- The main significant issues are from nutrients pollution and morphological impacts, followed by sediment, other, hydrological impacts, chemical and organic pollution.
- The main significant pressures are agricultural followed by hydromorphological pressures, forestry, other[9], mines and quarries, domestic waste water, urban waste water, urban run-off and industry.
- In the 2nd Cycle Areas for Action, eight waterbodies were *At Risk* in Cycle 2 and seven waterbodies are *At Risk* in Cycle 3.
- There are 10 3rd Cycle Recommended Areas for Action for Cycle 3. They comprise of 30 waterbodies with 14 waterbodies *At Risk*, four in *Review* and 12 *Not At Risk*.

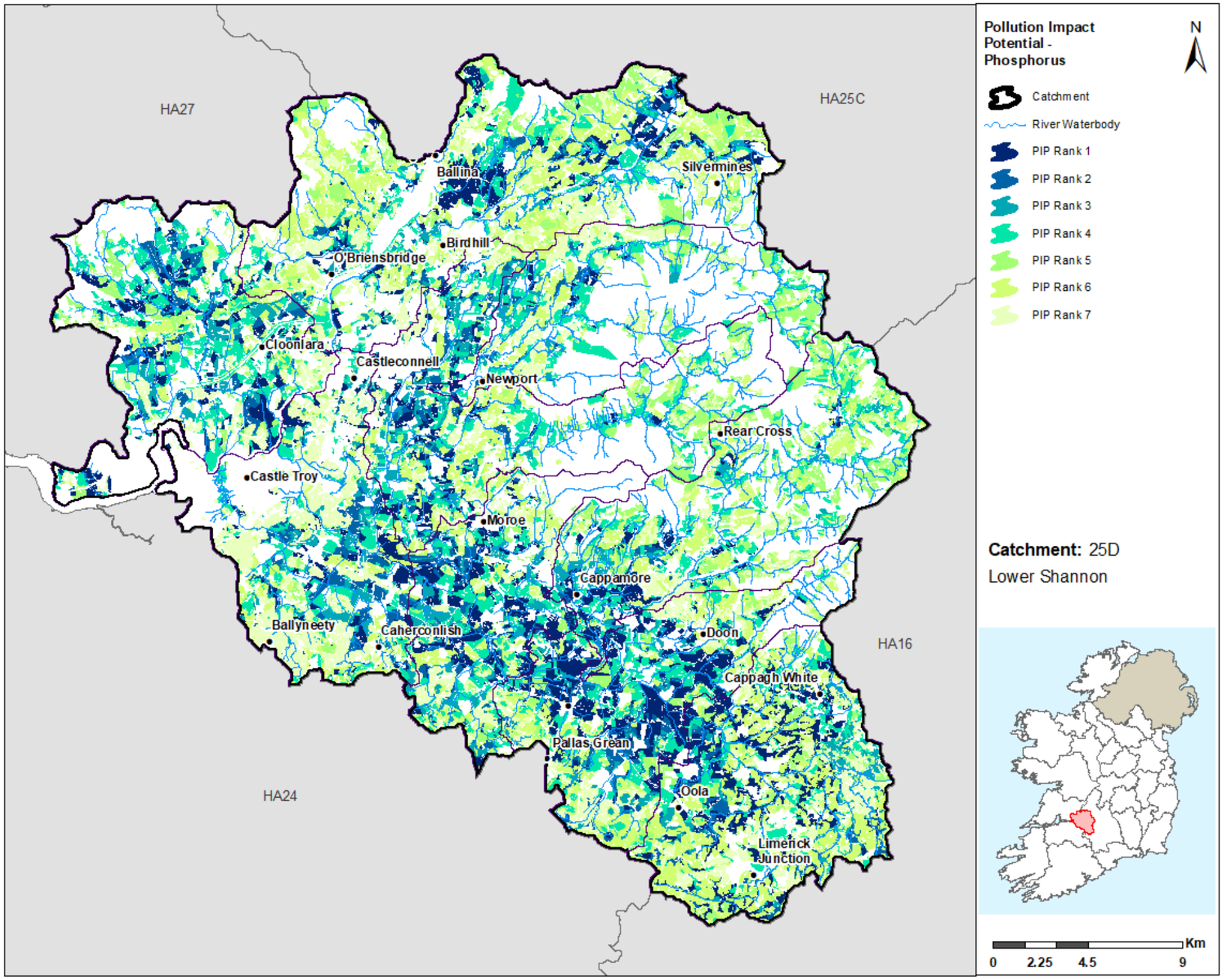
[9] Abstractions, aquaculture, atmospheric, anthropogenic pressures, historically polluted sites, waste, water treatment and invasive species have all been grouped into the "Other" pressure category for the purpose of this report

Appendix 1
High ecological status objective waterbodies

Waterbody Name	Waterbody Type	Waterbody Code	Status 2013-2018
ARDCLOONY_010	**River**	IE_SH_25A030100	High
BLACKWATER (CLARE)_010	**River**	IE_SH_25B060120	Good
DOONANE_010	**River**	IE_SH_25D040200	Good
MOUNTRICE_010	**River**	IE_SH_25M030300	Good
NEWPORT (TIPPERARY)_020	**River**	IE_SH_25N020080	High

Appendix 2
Pollution Impact Potential Mapping





Pollution Impact Potential - Phosphorus

N

- Catchment
- River Waterbody
- PIP Rank 1
- PIP Rank 2
- PIP Rank 3
- PIP Rank 4
- PIP Rank 5
- PIP Rank 6
- PIP Rank 7

Catchment: 25D
Lower Shannon

Km
0 2.25 4.5 9

Appendix 3
Summary information on all waterbodies in the Lower Shannon and Mulkear Catchment

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
25D_4	IE_SH_25A020100	ANNAGH (TIPPERARY)_010	River	Not at risk	Not at risk	Good	Good	No			
25D_4	IE_SH_25A020200	ANNAGH (TIPPERARY)_020	River	Not at risk	Not at risk	Good	Good	No			
25D_4	IE_SH_25A020300	ANNAGH (TIPPERARY)_030	River	Not at risk	Not at risk	Good	Good	No			
25D_6	IE_SH_25A030100	ARDCLOONY_010	River	Not at risk	Not at risk	High	High	Yes			
25D_5	IE_SH_25B030080	BILBOA_010	River	Review	At risk	Good	Moderate	No	For	Inch (Bilboa)	Limk CC: Suggested by subcatchment Bilboa_SC_010 NPWS: Lwr R Shannon SAC Coastal lagoons, Estuaries Mulkear EIP
25D_5	IE_SH_25B030500	BILBOA_020	River	Not at risk	Not at risk	Good	Good	No		Inch (Bilboa)	Limk CC: Suggested by subcatchment Bilboa_SC_010 NPWS: Lwr R Shannon SAC Coastal lagoons, Estuaries Mulkear EIP
25D_3	IE_SH_25B060120	BLACKWATER (CLARE)_010	River	At risk	At risk	Good	Good	Yes	Ag, For	Blackwater	HSO waterbody not meetings its objective. ASSAP resource would make positive impact to address pressure
25D_3	IE_SH_25B060250	BLACKWATER (CLARE)_020	River	Review	Not at risk	Good	Good	No		Blackwater	Include under SC approach for 25D_3
25D_6	IE_SH_25B230100	BRIDGETOWN (CLARE)_010	River	Not at risk	Not at risk	Good	Good	No			
25D_4	IE_SH_25B770660	BALLYARD_010	River	Not at risk	Not at risk	Unassigned	Unassigned	No			
25D_4	IE_SH_25B770990	BALLYARD_020	River	Review	Review	Unassigned	Unassigned	No			
25D_7	IE_SH_25C010025	CAHERNAHALLIA_010	River	Not at risk	Not at risk	High	Good	No			
25D_7	IE_SH_25C010100	CAHERNAHALLIA_020	River	Not at risk	Not at risk	Good	Good	No		Mulkear EIP	Part of Mulkear EIP NPWs priority habitat/species
25D_2	IE_SH_25C040500	CAUTEEN_010	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo	Dead and Cauteen	LAWPRO: Existing PAA
25D_2	IE_SH_25C100200	CAPPAWHITE STREAM_010	River	At risk	At risk	Poor	Poor	No	Ag, UWW	Toem and Cappawhite	LAWPRO: Existing PAA
25D_2	IE_SH_25D010100	DEAD_010	River	At risk	At risk	Moderate	Moderate	No	Ag, Hymo, Ind	Dead and Cauteen	LAWPRO: Existing PAA
25D_2	IE_SH_25D010200	DEAD_020	River	Review	At risk	Good	Moderate	No	Ag, DWW	Dead and Cauteen	LAWPRO: Subcatchment of existing PAA
25D_8	IE_SH_25D020400	DOOGLASHA (CAPPAMORE)_010	River	Review	Review	Unassigned	Unassigned	No		Mulkear (Limerick)	Existing PAA waterbody. ASSAP work programme wont be complete by Dec 21
25D_7	IE_SH_25D030600	DOON STREAM_010	River	At risk	Review	Moderate	Good	No		Mulkear EIP	Within Mulkear EIP area
25D_1	IE_SH_25D040200	DOONANE_010	River	At risk	At risk	Good	Good	Yes	Hymo		

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
25D_5	IE_SH_25G020500	GLASHACLOONARAVEELA_010	River	Not at risk	Not at risk	Good	Good	No		Inch (Bilboa)	Limk CC: Suggested by subcatchment Bilboa_SC_010 NPWS: Lwr R Shannon SAC Coastal lagoons, Estuaries Mulkear EIP
25D_5	IE_SH_25G030300	GORTNAGERAGH_010	River	Not at risk	Not at risk	Good	Good	No		Inch (Bilboa)	Limk CC: Suggested by subcatchment Bilboa_SC_010 NPWS: Lwr R Shannon SAC Coastal lagoons, Estuaries Mulkear EIP
25D_9	IE_SH_25G050200	GROODY_010	River	At risk	At risk	Moderate	Moderate	No	Ag, UR	Groody	Existing PAA waterbody. Furter characterisation may not be complete
25D_6	IE_SH_25G100100	GRANGE (TIPPERARY)_010	River	Review	At risk	Unassigned	Unassigned	No	Hymo, UWW		
25D_3	IE_SH_25G120100	GLENOMRA WOOD STREAM_010	River	Not at risk	Not at risk	Good	High	No		Blackwater	Include under SC approach for 25D_3
25D_5	IE_SH_25I010008	INCH (BILBOA)_010	River	At risk	At risk	Moderate	Moderate	No	Ag, For	Inch (Bilboa)	LAWPRO: Existing PAA Limk CC: Suggested by subcatchment Bilboa_SC_010 NPWS: Lwr R Shannon SAC Coastal lagoons, Estuaries Mulkear EIP
25D_4	IE_SH_25K020150	KILLEENGARRIFF_010	River	Not at risk	Not at risk	Good	Good	No		Mulkear EIP	Part of Mulkear EIP NPWs priority habitat/species
25D_6	IE_SH_25K040120	KILMASTULLA_010	River	Review	At risk	Moderate	Moderate	No	M+Q		
25D_6	IE_SH_25K040300	KILMASTULLA_020	River	Review	Review	Unassigned	Unassigned	No		Patrickswell GWS	NFGWS: Group water scheme groundwater source
25D_6	IE_SH_25K040800	KILMASTULLA_030	River	Review	At risk	Moderate	Poor	No	M+Q	Shallee Kiltyrome GWS	NFGWS: Group water scheme groundwater source
25D_6	IE_SH_25K040910	KILMASTULLA_040	River	Review	At risk	Moderate	Moderate	No	M+Q		
25D_6	IE_SH_25K041000	KILMASTULLA_050	River	Not at risk	Not at risk	Good	Good	No			
25D_3	IE_SH_25M030300	MOUNTRICE_010	River	Not at risk	At risk	High	Good	Yes	Hymo	Blackwater	Deteriorated HES objective waterbody. Neighbouring and discharging to Blackwater_010 (HSO WB also). Therefore actions in Mountrice_010 support actions in Blackwater_010 Include under SC approach for 25D_3
25D_7	IE_SH_25M040100	MULKEAR (LIMERICK)_010	River	Not at risk	Not at risk	Good	Good	No		Mulkear (Limerick)	Headwaters to Mulkear system. Expand PAA Catchment scale research project (Mulkear EIP) NPWS priority habitat/species
25D_8	IE_SH_25M040200	MULKEAR (LIMERICK)_020	River	At risk	Not at risk	Moderate	Good	No		Mulkear (Limerick)	Existing PAA waterbody. ASSAP work programme may not be complete by

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
											Dec 21 Part of Mulkear EIP. Active engagement NPWS priority habitat/species
25D_8	IE_SH_25M040300	MULKEAR (LIMERICK)_030	River	Review	Review	Unassigned	Unassigned	No		Mulkear (Limerick)	Downstream of existing PAA. Expand to follow SC approach Mulkear EIP NPWS priority habitat/species groundwater abstraction sources proposed for inclusion as an Area for Action
25D_8	IE_SH_25M040400	MULKEAR (LIMERICK)_040	River	Not at risk	Not at risk	Good	Good	No		Mulkear (Limerick)	Downstream of existing PAA. Expand to follow SC approach Mulkear EIP NPWS priority habitat/species
25D_9	IE_SH_25M040590	MULKEAR (LIMERICK)_050	River	Not at risk	Not at risk	Good	Good	No		Mulkear EIP	Part of Mulkear EIP NPWs priority habitat/species
25D_1	IE_SH_25N020060	NEWPORT (TIPPERARY)_010	River	Not at risk	Not at risk	Good	Good	No			
25D_1	IE_SH_25N020080	NEWPORT (TIPPERARY)_020	River	At risk	Not at risk	Good	High	Yes			
25D_1	IE_SH_25N020200	NEWPORT (TIPPERARY)_030	River	Not at risk	Not at risk	Good	Good	No			
25D_1	IE_SH_25N020330	NEWPORT (TIPPERARY)_040	River	Not at risk	Not at risk	Good	High	No			
25D_3	IE_SH_25N170970	North Ballycannan_010	River	At risk	At risk	Unassigned	Unassigned	No	Ag	Blackwater	NPWS priority habitat/species Include under SC approach 25D_3
25D_6	IE_SH_25S012500	SHANNON (LOWER)_050	River	At risk	At risk	Moderate	Moderate	No	Hymo		
25D_3, 25D_9	IE_SH_25S012600	SHANNON (LOWER)_060	River	Not at risk	Not at risk	Unassigned	Unassigned	No		Blackwater	Historic Milling Weirs/ Offtakes, Migration - Migratory Brown Trout forms (Croneen) NPWs priority habitat/species
25D_1	IE_SH_25S050200	SMALL (TIPPERARY)_010	River	Not at risk	Not at risk	Good	Good	No			
25D_2	IE_SH_25T050600	TOEM STREAM_010	River	At risk	At risk	Poor	Poor	No	For, Other	Toem and Cappawhite	LAWPRO: Existing PAA
25D_9	IE_SH_25W210770	WHITEHALL_010	River	At risk	At risk	Unassigned	Unassigned	No	DWW, UR	Groody	Existing PAA. Further characterisation work may not be complete
25C_10, 25C_11, 25D_6	IE_SH_25_191a	Derg TN	Lake	At risk	At risk	Poor	Moderate	No	Ag, Hymo, Other	L Derg Group Water Protection	NFGWS: Group Water Scheme groundwater abstraction sources proposed for inclusion as an Area for Acton (3rd Cycle) Oldhort GWS, Carrigahorig Milford GWS, Luska GWS NPWS: Lower river Shannon SAC Coastal lagoons. Estuaries
25D_6	IE_SH_25_191b	Derg HMWB	Lake	Not at risk	Review	Good	Good	No			
24_10, 24_16, 24_18, 25D_3, 27_11, 27_12	IE_SH_060_0800	Upper Shannon Estuary	Transitional	At risk	At risk	Poor	Poor	No	Ag		

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
24_10, 25D_3, 25D_9	IE_SH_060_0900	Limerick Dock	Transitional	At risk	Review	Moderate	Good	No			
15_13, 15_14, 15_15, 16_10, 16_11, 16_13, 16_18, 16_2, 16_20, 16_21, 16_22, 16_28, 16_4, 16_5, 16_6, 16_9, 24_12, 24_2, 24_3, 25B_6, 25C_4, 25C_5, 25D_2, 25D_5, 25D_7	IE_SE_G_131	Templemore	Groundwater	Review	Review	Good	Good	No			
25D_3, 25D_6, 25D_9, 27_12	IE_SH_G_009	Ardnacrusha	Groundwater	Review	Not at risk	Good	Good	No			
24_10, 24_12, 25D_2, 25D_5, 25D_7, 25D_8, 25D_9	IE_SH_G_036	Ballyneety	Groundwater	Review	Not at risk	Good	Good	No			
25D_3, 25D_4, 25D_6, 25D_9	IE_SH_G_052	Castleconnell	Groundwater	Review	Not at risk	Good	Good	No			
25D_3, 27_12	IE_SH_G_070	Cratloe	Groundwater	Review	Not at risk	Good	Good	No			
24_10, 24_12, 24_13, 24_16, 24_17, 24_18, 24_4, 24_8, 25D_7, 25D_9	IE_SH_G_084	Fedamore	Groundwater	Review	Review	Good	Good	No			
25D_6, 27_13	IE_SH_G_095	Broadford Gravels	Groundwater	Review	Not at risk	Good	Good	No			
24_12, 24_13, 25D_7, 25D_8, 25D_9	IE_SH_G_106	Herbertstown	Groundwater	At risk	At risk	Poor	Good	No	Ag		
16_13, 24_11, 24_12, 24_13, 24_15, 24_16, 24_17, 24_2, 24_3, 24_6, 24_8, 25D_2, 25D_7	IE_SH_G_107	Hospital	Groundwater	Not at risk	Not at risk	Good	Good	No			
24_12, 25D_5, 25D_7, 25D_8, 25D_9	IE_SH_G_129	Knockroe East	Groundwater	Not at risk	Not at risk	Good	Good	No			

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
24_10, 24_12, 24_13, 25D_8, 25D_9	IE_SH_G_130	Knockroe Northwest	Groundwater	Not at risk	Review	Good	Good	No			
24_12, 24_13, 25D_7	IE_SH_G_131	Knockroe Southwest	Groundwater	Not at risk	Review	Good	Good	No			
24_12, 25D_7, 25D_8	IE_SH_G_133	Knockseefin-Longstone East	Groundwater	Not at risk	Review	Good	Good	No			
24_12, 25D_7, 25D_8	IE_SH_G_134	Knockseefin-Longstone West	Groundwater	Not at risk	Not at risk	Good	Good	No			
24_10, 25D_3, 25D_9	IE_SH_G_138	Limerick City East	Groundwater	At risk	At risk	Poor	Good	No	Ag		
25D_3, 25D_9, 27_12	IE_SH_G_139	Limerick City North	Groundwater	At risk	Not at risk	Good	Good	No			
25D_3, 27_12	IE_SH_G_140	Limerick City Northwest	Groundwater	At risk	At risk	Poor	Good	No	Ag		
24_10, 24_13, 24_16, 25D_9	IE_SH_G_141	Limerick City Southwest	Groundwater	At risk	Review	Poor	Good	No			
25C_10, 25C_3, 25C_6, 25C_7, 25C_8, 25D_3, 25D_6, 27_12, 27_13, 27_14, 27_6, 29_7	IE_SH_G_157	Lough Graney	Groundwater	Not at risk	Not at risk	Good	Good	No			
16_22, 16_28, 16_5, 25B_5, 25B_6, 25B_7, 25C_1, 25C_10, 25C_11, 25C_2, 25C_4, 25C_5, 25C_9, 25D_1, 25D_4, 25D_5, 25D_6	IE_SH_G_178	Nenagh	Groundwater	Review	Review	Good	Good	No			
24_12, 25D_7, 25D_8, 25D_9	IE_SH_G_196	Pallas Grean	Groundwater	At risk	At risk	Poor	Good	No	Other		
24_10, 24_13, 24_16, 24_18, 24_8, 25D_9	IE_SH_G_197	Patrickswell	Groundwater	Not at risk	Review	Good	Good	No			
16_11, 16_13, 16_18, 16_28, 16_4, 24_12, 25C_5, 25D_1, 25D_2, 25D_4, 25D_5, 25D_6,	IE_SH_G_213	Slieve Phelim	Groundwater	Not at risk	Not at risk	Good	Good	No			

Subcatchment Code	Waterbody Code	Waterbody Name	Waterbody Type	Risk 10-15	Risk 13-18	Status 10-15	Status 13-18	High Ecological Status Objective Waterbody	Significant Pressures	Recommended Areas for Action Name	Recommended Areas for Action (reasons for selection)
25D_7, 25D_8, 25D_9											
25D_2	IE_SH_G_219	Industrial Facility (P0331-01)	Groundwater	At risk	At risk	Poor	Poor	No	Ind		
25C_10, 25C_3, 25C_8, 25D_3, 25D_6, 27_1, 27_11, 27_12, 27_13, 27_14, 27_6	IE_SH_G_229	Tulla-Newmarket on Fergus	Groundwater	Review	Review	Good	Good	No			
25D_1, 25D_6	IE_SH_G_248	Historic Mine (Silvermines)	Groundwater	Review	At risk	Poor	Poor	No	Other		
25D_6	IE_SH_G_250	Silvermines Gravels	Groundwater	Review	Not at risk	Good	Good	No			
25D_4, 25D_6, 25D_9	IE_SH_G_257	O'Briensbridge Gravels	Groundwater	Review	Not at risk	Good	Good	No			
24_10, 25D_9	IE_SH_G_260	Industrial Facility (P0650-02)	Groundwater	Not at risk	Not at risk	Good	Good	No			

Ag: Agriculture

DWW: Domestic Waste Water

For: Forestry

Hymo: Hydromorphology

Ind: Industry

M+Q: Mines and Quarries

Peat: Peat Drainage and Extraction

UR: Urban Run-off

UWW: Urban Waste Water

Note: Significant Pressures for *Review* waterbodies have not been included as they will need to be confirmed as part of an Investigative Assessment.